

PATENT ABSTRACTS OF JAPAN

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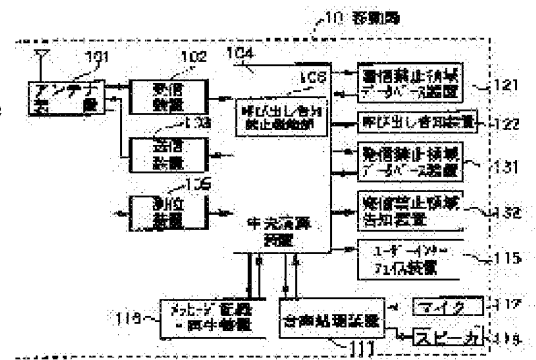
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(54) MOBILE OBJECT COMMUNICATIONS SYSTEM

(57)Abstract:

PURPOSE: To regulate the generation of the call notification of a mobile station within an incoming inhibition area troubling others.

CONSTITUTION: In a bidirectional mobile object communications system composed of a mobile station, a base station and a control center, the mobile station 10 measures the present location by a positioning device 105. When the mobile station is called, the central arithmetic unit 104 of the mobile station 10 decides whether the mobile station 10 is within an incoming inhibition area or not by this present location and the data from an incoming inhibition area data base device 121. When the unit 104 decides that the mobile station is within the incoming inhibition area, the user call notification by a call notifying device 122 is inhibited by a call notification inhibition function part 106.



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CLAIMS

[Claim(s)]

[Claim 1]A mobile communications system which has a control center which manages a mobile station and a base station characterized by comprising the following, and two or more base stations.

A detection means to detect whether said mobile station is in a mail arrival prohibited position.

A notice inhibiting means which forbids a notice of a mobile station arrival call when it is in said mail arrival prohibited position by a detection result in said detection means.

[Claim 2]The mobile communications system according to claim 1 characterized by forbidding establishment of a communication line between said mobile station and said base station when it is in said mail arrival prohibited position by said detection result.

[Claim 3]The mobile communications system according to claim 1 having message record and the reproduction means which records a message from a sending agency when it is in said mail arrival prohibited position by said detection result, and reproduces a message from said dispatch origin according to a demand from a mobile station user.

[Claim 4]The mobile communications system comprising according to claim 2 or 3:

A positioning device for said detection means to measure a position of this mobile station that a mobile station has.

A data base device which specifies a mail arrival keepout area which a mobile station, a base station, or a control center has.

[Claim 5]The mobile communications system comprising according to claim 2 or 3:

A positioning device for said detection means to measure a position of a mobile station which a base station and a control center have.

A data base device which specifies a mail arrival keepout area which a mobile station, a base station, or a control center has.

[Claim 6]The mobile communications system comprising according to claim 2 or 3:

A signal generation device with which said detection means covers applicable area established in each mail arrival prohibition area.

An applicable inhibiting-signal receiving set which a mobile station has.

[Claim 7]The mobile communications system according to claim 2 or 3, wherein said detection means is managed by time information.

[Claim 8]The mobile communications system according to claim 2 or 3, wherein said detection means is managed by priority information for every mobile station.

[Claim 9]The mobile communications system according to claim 3, wherein any one of a mobile station, a base station, and control centers has said message record and reproduction means.

[Claim 10]When two which contains a mobile station at least among a mobile station, a base station, and a control center have said message record and reproduction means and it becomes impossible to record on message record and a reproduction means by the side of a mobile station, The mobile communications system according to claim 3 characterized by what is recorded on message record and a reproduction means by the side of a base station or a control center.

[Claim 11]A mobile communications system which has a control center which manages a mobile station and a base station forbidding establishment of a communication line between said mobile station and said base station when it has the following and is in said dispatch prohibited position by said detection result, and two or more base stations.

A detection means to detect whether said mobile station is in a dispatch prohibited position.

A means to notify a mobile station user of mobile station dispatch being prohibition when it is in said dispatch prohibited position by a detection result in said detection means.

[Claim 12]The mobile communications system comprising according to claim 2 or 3:

A positioning device for said detection means to measure a position of this mobile station that a mobile station has.

A data base device which specifies a dispatch keepout area which a mobile station, a base station, or a control center has.

[Claim 13]The mobile communications system comprising according to claim 11:

A positioning device for said detection means to measure a position of a mobile station which a base station and a control center have.

A data base device which specifies a dispatch keepout area which a mobile station, a base station, or a control center has.

[Claim 14]The mobile communications system comprising according to claim 11:

A signal generation device with which said detection means covers applicable area established in each dispatch prohibition area.

An applicable inhibiting-signal receiving set which a mobile station has.

[Claim 15]The mobile communications system according to claim 11, wherein said detection means is managed by time information.

[Claim 16]The mobile communications system according to claim 11, wherein said detection means is managed by priority information for every mobile station.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application]This invention relates to the mobile communications system used by the technical field of the phone system using what is called a cellular phone system and a satellite, etc., for example.

[0002]

[Description of the Prior Art]The mobile communications system, for example, what is called a cellular phone system, is constituted, for example like drawing 2.

[0003]In drawing 2, it should be located in the service area 15 of the base station 11 with the mobile station 10, and the control center 14 should have call (mail arrival) directions of the mobile station 10 via the ordinary public circuit 21 now. At this time, the control center 14 directs the call of the mobile station 10 to two or more base stations registered by then.

[0004]Now, if the call of the mobile station 10 should be directed also to the base station 11, the base station 11 sends out the call message of the mobile station 10 in the service area 15 of the base station 11. The mobile station 10 which is in the service area 15 of the base station 11, If a reception confirmed message is transmitted to the base station 11 according to the call message of the base station 11, it tells that sound a calling sound and a user has mail arrival and a user responds to mail arrival, the message of mail arrival acceptance is sent out to the base station 11. The base station's 11 reception of this will send out connection and the line connection prompting message which points, assigns the mobile station 10 and shows a channel, timing, etc. to the control center 14 for a line connection. Thereby, via the base station 11 and the control center 14, the mobile station 10 can establish a communication line and can telephone to the telephone on a public line.

[0005]When the user of the mobile station 10 transmits the calling request message which contains the telephone number of a call destination to the base station 11 in the example of drawing 2, the base station 11, The confirmation of receipt and channel allocation of the message, timing, etc. are transmitted to the mobile station 10, and a calling request message is handed over to the control center 14. The control center 14 starts call operation of a call destination, and establishes the communication line of the mobile station 10 and a call destination via the base station 11. If a call destination user answers a call, the control center 14 can talk over the telephone by pointing to a line connection to the mobile station 10 via the base station 11.

[0006]

[Problem(s) to be Solved by the Invention]By the way, in the above systems, Even if the mobile station was in what kind of place, when communication was physically possible, mobile station arrival and mobile station dispatch were always performed, are a place which inconveniences others in sounding the calling sound of a mobile station or talking, and did not have a means to forbid such an act.

[0007]For example, becoming troublesome [the sending-and-receiving act in the seat of vehicles such as the Shinkansen and a bus, / other passengers] is pointed out, and the complaint is already brought near by the railroad company etc. The cellular-phone call act to the gallery in the golf tournament hall may become the hindrance of advance of a game, while having an adverse effect on the psychology of the player under game. It is pointed out that the sending-and-receiving act in public facilities, such as the hall of a concert, a waiting room of a hospital or a library, and a court, not only makes other listeners and users trouble, but serves as hindrance of a performance, business, and official business.

[0008]There is the purpose of this invention in providing the mobile communications system which can reduce the disadvantage of the access-to-information opportunity loss by having been forbidden while it is such and

also can forbid the mobile station arrival act and dispatch act in a place which inconvenience people.

[0009]

[Means for Solving the Problem]In a mobile communications system which has a control center which manages a mobile station, a base station, and two or more base stations in order that an invention of 1 concerning this application may solve a technical problem mentioned above, When it has a means to detect whether a mobile station is in a mail arrival prohibited position, and a means which does not notify a user of a mobile station call when it is in a mail arrival prohibited position by a detection result and is in a mail arrival prohibited position, it is characterized by not establishing a communication line between a mobile station and a base station.

[0010]Here, message record and a reproduction means which records and reproduces a message from a sending agency are established, when it is in said mail arrival prohibited position, a message from a sending agency is recorded, and it is possible to reproduce a message from the dispatch origin according to a demand from a mobile station user. At this time, it is preferred to notify a mobile station user of a message from a sending agency being recorded by a certain means. What is necessary is just to provide this message record and reproduction means in any 1 of a mobile station, a base station, and control centers, or two or more.

[0011]A means to detect whether mobile station of other inventions concerning this application is in a dispatch prohibited position in order to solve a technical problem mentioned above, If it has a means to notify a mobile station user of that and is in a dispatch prohibited position when it is in a dispatch prohibited position from a detection result, it is characterized by not establishing a communication line between a mobile station and a base station.

[0012]In these inventions, as said detection means, A positioning device for measuring a position of this mobile station that a mobile station has, and a mobile station, A thing provided with a data base device which specifies a mail arrival keepout area which either a base station or a control center has, Or a thing provided with a positioning device for measuring a position of a mobile station which a base station and a control center have, and a data base device which specifies a mail arrival keepout area which a mobile station, a base station, or a control center has can be used. As said detection means, a thing provided with a signal generation device which covers applicable area established in each mail arrival prohibition area, and an applicable inhibiting-signal receiving set which a mobile station has can be used. Such a detection means may be made to be managed by time information and priority information for every mobile station.

[0013]

[Function]The mail arrival act in the place which makes others trouble is controllable by forbidding a mobile station from sounding a mail arrival calling sound with the current position of a mobile station, or forbidding communication line establishment by the above-mentioned composition. By or the thing record the message from a sending agency within the mail arrival keepout area of a mobile station, without notifying a mobile station user of mail arrival, and it enables it to reproduce later. The access-to-information opportunity loss of the mobile station user in the field is avoidable, filling the demand of not making you trouble on the outskirts within a **** keepout area.

[0014]The dispatch act in the place which makes others trouble is controllable by forbidding the communication line establishment for mobile station dispatch with the current position of a mobile station.

[0015]

[Example]Hereafter, one example of this invention is described, referring to drawing 1 – drawing 4. Drawing 1 shows the composition of the mobile station 10 used for what is called a cellular phone system that is a kind of a bidirectional mobile communications system, and shows drawing 2 the so-called example of the cellular phone system by which this mobile station 10 is used.

[0016]That is, drawing 2 is the so-called key map of a cellular phone system, and shows the so-called example of the cellular phone system which has the three base stations 11–13. The control center 14 has a role rate which connects between control of each base stations 11–13, and a base station, a base station, and the public line 21. For these base station control and line connections, it is connected by the connecting lines 18–20 between the control center 14 and each base stations 11–13, respectively. Each base stations 11–13 have the service areas 15–17 whose communication the base station enables physically, respectively.

In *****, the above-mentioned mobile station 10 is in the service area 15 of the base station 11, and is in the state where it can telephone to the telephone (not shown) on a public line, or other mobile stations (not shown), via the base station 11 and the control center 14.

[0017]Drawing 1 shows an example of the composition of such a mobile station 10. In the receiving system of

the mobile station 10, it is received by the antenna system 101, it gets over with the receiving set 102, and the signal transmitted from the base station 11 is inputted into the central arithmetic unit 104. If this demodulation signal is a control signal, it will be analyzed within the central arithmetic unit 104, and if a demodulation signal is a call signal, the call notification device 122 will be driven and a user will be told. If the demodulation signal from the receiving set 102 is an audio signal, it will be handed over to the speech processing unit 111, and will be outputted by the loudspeaker 113 as a sound.

[0018]In the transmission system of the mobile station 10, a sound is changed into an electric signal with the microphone 112, and the central arithmetic unit 104 incorporates this input voice signal via the speech processing unit 111. Or the central arithmetic unit 104 creates send data by demand of the situation or a user. The sending set 103 sends and becomes irregular and the output signal from the central arithmetic unit 104 is transmitted to a base station via the antenna system 101.

[0019]The positioning device 105 deduces the current position of the mobile station 10 from the reception radio wave for positioning of the antenna system 101. The mobile station 10 can report the current position of a local station to a base station, when the mail arrival instruction request from a base station occurs. As a positioning electric wave, GPS (Global Positioning System) etc. to which use is generally accepted can be used. In this case, the antenna system 101 may be independently prepared as a positioning system, and as long as it can use in common, it may be shared.

[0020]The central arithmetic unit 104 judges whether the current position of the mobile station 10 is in a mail arrival keepout area from the current position from the data and the positioning device 105 from the mail arrival keepout area database device 121. When judged with the current position of the mobile station 10 being in a mail arrival keepout area, the call notice prohibition function part 106 in the central arithmetic unit 104 calls, and he forbids the drive of the notification device 122, and is trying not to notify a user, even if a demodulation signal is a call signal. If some [one / of the mobile station 10, the base station 11, and the control centers 14] has a mail arrival keepout area database device, it is enough.

[0021]The central arithmetic unit 104 hands over and records the voice data originally handed over to the speech processing unit 111 on message record and the playback equipment 116, or, That record data can be reproduced from message record and the playback equipment 116, and this data can be made to output from the loudspeaker 113 via the speech processing unit 111. The message from a sending agency can be recorded by this, or it can reproduce. The data which message record and the playback equipment 116 treat may be not only voice data but alphabetic data, graphics data, etc. In this case, it is good also as various outputting parts like indicators, such as LCD (liquid crystal display) which passed not the loudspeaker 113 through the speech processing unit 111 but the user interface device 115 mentioned later as an output destination change at the time of reproduction.

[0022]The user interface device 115 is for handing over the demand which the mobile station user inputted to the central arithmetic unit 104, or displaying the information from the central arithmetic unit 104 on a mobile station user's indicator. A mobile station user can be notified of there being a message recorded on message record and the playback equipment 116 by this, and a mobile station user can direct reproduction of the message.

[0023]The central arithmetic unit 104 judges whether the current position of the mobile station 10 is in a dispatch keepout area from the current position from the data and the positioning device 105 from the dispatch keepout area database device 131. When it is in a dispatch keepout area as a result of a judgment, a mobile station user is notified of that by the sound or the beep sound, and an alarm lamp using the notification device 132 in a dispatch keepout area. A user shall be notified of the notification device 132 in a dispatch keepout area in this example by the sound or a beep sound, and the speech processing unit 111 and the loudspeaker 113 may realize it. If some [one / of the mobile station 10, the base station 11, and the control centers 14] has a dispatch keepout area database device, it is enough.

[0024]Drawing 3 shows the composition of the base station 11. In the receiving system of the base station 11, it is received by the antenna system 301, it gets over with the receiving set 302, and the signal transmitted from the mobile station 10 is inputted into the central arithmetic unit 304.

[0025]If a demodulation signal is a control signal, it will be analyzed within the central arithmetic unit 304, and if necessary, the information will be sent to the control center 14 via the communication apparatus 310 and the connecting line 18 with a control center. If it is an audio signal, it will be similarly sent to the control center 14 via the communication apparatus 310 and the connecting line 18 with a control center.

[0026]In a transmission system, the control signal sent via the communication apparatus 310 and the

connecting line 18 with the control center 14 to a control center, If the central arithmetic unit 304 is passed and the information needs to transmit to the mobile station 10, the central arithmetic unit 304 hands it over to the sending set 303, and it will become irregular and it will be transmitted to 15 in a service area from the antenna system 301. The sending set 303 hands over and becomes irregular from the central arithmetic unit 304, and the audio signal addressed to mobile station 10 sent from the control center 14 is also transmitted into the service area 15 from the antenna system 301. Furthermore, the central arithmetic unit 304 judges whether the current position of the mobile station 10 is in a mail arrival keepout area from the current position which received the report from the data and the mobile station 10 from the mail arrival keepout area database device 321. The central arithmetic unit 304 judges whether the current position of the mobile station 10 is in a dispatch keepout area from the current position which received the report from the data and the mobile station 10 from the dispatch keepout area database device 331.

[0027]Drawing 4 shows the composition of the control center 14. The control and the audio signal from the base station 11 are inputted into the communication apparatus 411 with a base station group from the connecting line 18, and are handed over by the central arithmetic unit 404. Among them, an audio signal and some control signals will be sent via the communication apparatus 412 with a public line, if a communications partner is a telephone (not shown) on the public line 21. The audio signal and control signal addressed to mobile station 10 from a telephone are inputted into the communication apparatus 412 with a public line, and are handed over to the central arithmetic unit 404. [on the public line 21] And it is sent to the base station 11 via the communication apparatus 411 and the connecting line 18 with a base station group. The mail arrival keepout area database device 421 has the same function as the mail arrival keepout area database device 321 in the base station 11 of above-mentioned drawing 3. The dispatch keepout area database device 431 has the same function as the dispatch keepout area database device 331 in the above-mentioned base station 11.

[0028]It explains referring to the flow chart shown in drawing 5 and drawing 6, and the Table 1 and 2 for the example described above. Here, it explains as what has a mail arrival prohibition database device in the base station 11.

[0029]If the telephone number of the mobile station 10 is inputted from the telephone (not shown) on the public line 21, the telephone number will be sent to the control center 14 (Step 501). The control center 14 points to the call of the mobile station 10 to the base stations 11-13 with the telephone number of the mobile station 10 (Step 502), and each base station sends out the message of a mobile station call (Step 503). The mobile station 10 which is in the service area of the base station 11 sends out the confirmation of receipt of a call message, and the currency information of a local station to the base station 11 according to the call message from the base station 11 (Steps 504 and 506). As currency information, the information on the lat/long obtained from the positioning device 105 is given. At this time, it requires of the purport and the base station 11 a mobile station user wants to receive a message also within a mail arrival keepout area, and there may also be procedure accepted.

[0030]The base station 11 which received the currency information of the call message reception check and the mobile station 10, The data obtained from the current position and mail arrival keepout area database device of the mobile station 10 is compared, and it is judged whether the mobile station 10 is in the mail arrival keepout area in the service area 15 (Step 507). Here, as a mail arrival keepout area database, as shown in Table 1, it is possible to comprise the lat/long and the radius of a field of the center spots of a mail arrival keepout area. It can be judged whether this exists from the lat/long of the mobile station 10, the lat/long of center spots, and a radius in the circle by which the mobile station 10 is surrounded in the radius from center spots. Mail arrival can be preferentially done also within a mail arrival keepout area by enabling it to control a mail arrival keepout area by date time, or repealing a mail arrival keepout area to a specific mobile station (Step 508).

[0031]

[Table 1]

No.	サービスエリア	中心地点（緯度、経度）	半径	時刻指定	対象外移動局番号
1	15	北緯45度00分00秒、 東経145度00分00秒	200m	92年12月30日12:00 ～ 93年1月3日23:00	01,33,45,...

[0032]When it is distinguished from NO (the mobile station 10 does not exist in the mail arrival keepout area of the service area 15) at Step 507 as a result of an above-mentioned judgment, or when it is distinguished from YES (it is a mobile station outside an object) at Step 508, it progresses to Step 511 of drawing 6. on the other hand, when distinguished from NO at Step 508, Judge with the mobile station 10 being in the mail arrival keepout area of the service area 15 as for the central arithmetic unit 304 (Step 507), and when it is not the above-mentioned mobile station outside an object, It reports that the mobile station 10 is in a mail arrival keepout area to the mobile station 10 in the base station 11 (Step 509), and it is asked whether message record is possible (Step 510). When distinguished from YES at this step 510, it progresses to Step 521 of drawing 6, and when distinguished from NO, it progresses to Step 529. In this step 529, call operation of the mobile station 10 is forbidden and that is notified also to the control center 14. In this case, the user of the telephone on the public line 21 can know that a telephone will not be connected from the control center 14 by the same beep as [with a sound / a notice or during the conversation]. Then, it progresses to Step 517 of drawing 6, and the whole operation is ended.

[0033]In Step 511 of drawing 6, the base station 11 performs assignment of a channel required for a telephone call, directions of timing, etc. to the mobile station 10, and it directs to carry out a user call notice. Simultaneously, the line connection of the base station 11 and the telephone (not shown) on the public line 21 is required from the control center 14 (Step 512). And when the user of the mobile station 10 takes a receiver according to a call, The mobile station 10 is called, stops a notice, and advances a line connection request to the base station 11 (Step 513), the base station 11 notifies a line connection to the control center 14 in response to it, and a line connection is directed to the mobile station 10 (Step 514). Thereby, the telephone (not shown) on a public line and the circuit of the mobile station 10 are connected, and a telephone call is performed (Step 515). And the whole operation is ended after a telephone call is completed (Step 516) (Step 517).

[0034]On the other hand, by the mobile station 10 being in a mail arrival keepout area, if message record is possible, in Step 521, the base station 11 will perform assignment of a channel required for a telephone call, directions of timing, etc. to the mobile station 10. It is not necessary to use the channel assigned to a telephone call only as the channel of one of the two which receives from the base station 11 to the mobile station 10 unlike the usual mobile station call, and to assign the channel from the mobile station 10 to the base station 11 at this time. The base station 11 requires the line connection of the base station 11 and the telephone (not shown) on the short course circuit 21 from the control center 14 (Step 522). Next, the mobile station 10 advances a line connection request to the base station 11, without calling a mobile station user (Step 523), and the base station 11 notifies a line connection to the control center 14 in response to it, The base station (Step 524) 11 which directs a line connection to the mobile station 10 tells to a sending agency that the mobile station 10 exists in a mail arrival keepout area, and requires transmission of a message (525). The mobile station 10 will record this on message record and the playback equipment 116, if the message from a sending agency comes (Step 526). The mobile station 10 ends record of a message, when a sending agency stops transmission of a message, and a telephone is hung up or it passes predetermined time (Step 527). Simultaneously, it memorizes that there was a message from a sending agency, for example in form as shown in Table 2 in the central arithmetic unit 104, or message record and playback equipment 116 (Step 528).

[0035]

[Table 2]

No.	発信元電話番号	発信者名	記録開始時間	記録時間
	03-xxxx-△△△△	□□○○	93年5月5日12:00	00時間03分00秒

[0036]In this table 2, No. is a number for taking correspondence with the message data recorded in message record and the playback equipment 116.

An addresser's telephone number is memorizable in a system which is notified from a base station, and an addresser name is memorizable if there is data which the mobile station user stored in the storage device in a mobile station with the telephone number beforehand.

[0037]It notifies of having outputted the mobile station 10 to the display device in which the telephone number of such dispatch origin, a name, recording start time, the record time, etc. were provided by the user interface device 115, or it being a sound and having had message record to a mobile station user (Step 528). However,

when the mobile station 10 exists in a mail arrival keepout area, Since it cannot notify with a sound, when notifying with a sound, As shown in drawing 7, when it confirms periodically whether the mobile station 10 exists in a mail arrival keepout area (Step 531) and comes out of a mail arrival keepout area, If it confirms whether there is any unreproduced message recorded when it was in a mail arrival keepout area (Step 532) and there is an unreproduced message, It can notify of that to a mobile station user with a sound using the buzzer etc. which were formed in the user interface device 115 (Step 533). by these notices, as shown in drawing 8, a mobile station user operates the key in which reproduction of the recorded message was provided at the user interface device — requiring (Step 541). If the mobile station 10 has a recorded message (Step 542), the message currently recorded will be reproduced using message record and the playback equipment 116 (Step 543).

[0038]Instead of a base station having, as shown in drawing 4, the control center 14 may have the mail arrival keepout area database device described here. This case is explained with reference to the flow chart shown in drawing 9. In this case, from the step which inputs the telephone number of the mobile station 10 from the telephone (not shown) on the public line 21 of above-mentioned drawing 2. The mobile station 10 which is in the service area of the base station 11 according to the call message from the base station 11, Since the step which sends out the confirmation of receipt of a call message and the currency information of a local station to the base station 11 is the same as Step 501 to the step 506 of drawing 5 mentioned above, it does not illustrate but explanation is omitted.

[0039]In Step 506 of drawing 5, the base station 11 which received the currency information of the call message reception check and the mobile station 10, After progressing to Step 557 of drawing 9 and handing over the current position of the mobile station 10 to the control center 14, The central arithmetic unit 404 of drawing 4 compares the data obtained from the mail arrival keepout area database device 431, and it is judged whether the mobile station 10 is in the mail arrival keepout area in the service area 15 (Step 558).

[0040]Or the mobile station 10 does not exist in the mail arrival keepout area of the service area 15 as a result of an above-mentioned judgment, when it is a mobile station outside an object, it is directed that the control center 14 establishes a communication line with the mobile station 10 to the base station 11 (Step 562). A base station performs assignment of a channel, directions of timing, etc. based on these directions, and it directs to carry out a user's call notice (Step 563). And if the user of the mobile station 10 takes a receiver according to a call, call the mobile station 10, it stops a notice and the base station 11 is received, A line connection request is advanced (Step 564), the base station 11 notifies a line connection with the mobile station 10 to the control center 14 in response to it, and a line connection is directed to the mobile station 10 (Step 565). Thereby, the telephone (not shown) on a public line and the telephone call of the mobile station 10 are performed (Step 566).

[0041]On the other hand, it judges with the central arithmetic unit 404 being in the mail arrival keepout area of the service area 15 as for the mobile station 10, reports that the mobile station 10 is in the base station 11 in a mail arrival keepout area when it is not a mobile station outside an object (Step 560), and directs to stop call operation of the mobile station 10. Thereby, the base station 11 gives notice of it being in a mail arrival keepout area to the mobile station 10, and forbids a user call notice to it (Step 561). At this time, the control center 14 can tell that notify the user of the telephone on the public line 21 with a sound that, or send out the same beep as during the conversation to him, and a telephone does not lead to him.

[0042]Mobile station 10 self may have a mail arrival keepout area database instead of a base station or a control center. This case is explained with reference to the flow chart shown in drawing 10 and drawing 11.

[0043]In Step 571 of drawing 10, if the telephone number of the mobile station 10 is inputted from the telephone (not shown) on the public line 21, the telephone number will be sent to the control center 14. The control center 14 points to the call of the mobile station 10 to the base stations 11-13 with the telephone number of the mobile station 10 (Step 572), and each base station sends out the message of a mobile station call (Step 573). The mobile station 10 which is in the service area of the base station 11, The call message from the base station 11 is received (Step 574), The central arithmetic unit 104 compares the currency information from the positioning device 105 with the data from the mail arrival prohibition database device 109, and it is judged whether a local station is in the mail arrival keepout area in the service area 15 (Step 575). As a result, or the mobile station 10 does not exist in the mail arrival keepout area of the service area 15, when it is a mobile station outside an object, it calls to the base station 11 and the confirmation of receipt of a message is sent out (Step 581). if it is received, to the mobile station 10, the base station 11 will perform assignment of a channel, directions of timing, etc., and will carry out a user's call notice — as — directing

(Step 582). Circuit establishment with the telephone (not shown) on the public line 21 is required of the control center 14 (Step 583). And if the user of the mobile station 10 takes a receiver according to a call, call the mobile station 10, it stops a notice and the base station 11 is received, A line connection request is advanced (Step 584), the base station 11 notifies a line connection to the control center 14 in response to it, and a line connection is directed to the mobile station 10 (Step 585). Thereby, the telephone (not shown) on a public line and the telephone call of the mobile station 10 are performed (Step 586).

[0044]On the other hand, when the central arithmetic unit 104 judges with the mobile station 10 being in the mail arrival keepout area of the service area 15, and not being a mobile station outside an object, it is required to notify the base station 11 that the mobile station 10 is in a mail arrival keepout area (Step 591), and to stop call operation of the mobile station 10. Thereby, the base station 11 notifies that also to the control center 14 (Step 592). And the control center 14, the base station 11, and the mobile station 10 stop user call notice operation (Step 593). At this time, the control center 14 can tell that notify the user of the telephone on the public line 21 of that with a sound, or send out the same beep as during the conversation to him, and a telephone does not lead to him.

[0045]Next, it explains, referring to the flow chart and Table 3 which are shown in drawing 12 for the case where a dispatch prohibition process is performed. Here, it explains as what has a dispatch prohibition database device in the base station 11.

[0046]

[Table 3]

No.	サービスエリア	中心地点（緯度、経度）	半径	時刻指定	対象外移動局番号
1	17	北緯35度00分00秒， 東経140度00分00秒	100m	92年12月30日12:00 ～ 93年9月1日24:00	01,33,45,...

[0047]If the user of the mobile station 10 of said drawing 1 demands dispatch to the telephone (not shown) on other mobile stations (not shown) or the public line 21, the mobile station 10 sends out a calling request message to the base station 11 with the current position of a call destination telephone number and a local station (Step 601). As currency information, the information on the lat/long obtained from the positioning device 105 is given. At this time, it requires of the purport and the base station 11 to which a mobile station user wants to send also within a dispatch keepout area, and there may also be procedure accepted. It is judged whether the base station 11 which received the calling request message compares the data obtained from the current position and dispatch keepout area database device of the mobile station 10, and the mobile station 10 is in the dispatch keepout area in the service area 15 (Step 602).

[0048]Here, as a dispatch keepout area database, as shown in Table 3, it is possible to comprise the lat/long and the radius of a field of the center spots of a dispatch keepout area. It can be judged whether this exists from the lat/long of the mobile station 10, the lat/long of center spots, and a radius in the circle by which the mobile station 10 is surrounded in the radius from center spots. Dispatch can be preferentially done also within a dispatch keepout area by enabling it to control a dispatch keepout area by date time, or repealing a dispatch keepout area to a specific mobile station (Step 603).

[0049]Or the mobile station 10 does not exist in the dispatch keepout area of the service area 15 as a result of an above-mentioned judgment, when it is a mobile station outside an object, the base station 11 performs assignment of a channel required for a telephone call, directions of timing, etc. to the mobile station 10 (Step 605). And the base station 11 requires the call of the telephone (not shown) of a call destination from the control center 14 (Step 606). If the user of the telephone (not shown) of a call destination takes a receiver according to a calling sound, the control center 14 will be notified to the base station 11, and the communication line of the base station 11 and call destination telephone (not shown) is connected (Step 607). The base station 11 can talk over the telephone by performing line connection directions (Step 608) to the mobile station 10.

[0050]It judges with it being in the dispatch keepout area of the service area 15, and reports that the mobile station 10 is in a dispatch keepout area to the mobile station 10 in the base station 11 when the mobile station 10 is not a mobile station outside an object (Step 604), and dispatch operation of the mobile station 10 is stopped. It is not necessary to connect anything to the control center 14. In this case, to a user, the mobile

station 10 notifies of it being prohibition on dispatch with a sound etc., and forbids dispatch (Step 610).

[0051]The control center 14 may have the dispatch keepout area database device described here instead of a base station. An example in this case is explained with reference to the flow chart shown in drawing 13.

[0052]If the user of the mobile station 10 demands dispatch to the telephone (not shown) of a call destination, the mobile station 10 sends out a calling request message to the base station 11 with the current position of a call destination telephone number and a local station (Step 621). The base station 11 hands over the telephone call number received from the mobile station 10, and the currency information of the mobile station 10 to a control center (Step 622). It is judged whether the control center 14 compares the data obtained from the current position and the dispatch keepout area database device 431 of the mobile station 10, and the mobile station 10 is in the dispatch keepout area in the service area 15 (Step 623).

[0053]When the mobile station 10 does not exist in the dispatch keepout area of the service area 15 as a result of an above-mentioned judgment, or when it is a mobile station outside an object, The control center 14 points to a line connection with the mobile station 10 to the base station 11 (Step 626), the base station 11 — the mobile station 10 — channel allocation, timing, etc. — directing (Step 627) — the call of call destination telephone (not shown) is required of the control center 14 (Step 628). If the user of the telephone (not shown) of a call destination takes a receiver according to a calling sound, the control center 14 can be notified to the base station 11 (Step 629), and the base station 11 can talk over the telephone by performing line connection directions (Step 630) to the mobile station 10.

[0054]It judges with it being in the dispatch keepout area of the service area 15, and reports that the mobile station 10 is in a dispatch keepout area to the mobile station 10 via the base station 11 in the control center 14 when it is not a mobile station outside an object, and dispatch operation of the mobile station 10 is stopped (Step 632). In this case, to a user, the mobile station 10 notifies of it being prohibition on dispatch with a sound etc., and forbids dispatch (state step 633).

[0055]Mobile station 10 self may have a dispatch keepout area database instead of the base station 11 or the control center 14. An example in this case is explained with reference to the flow chart shown in drawing 14.

[0056]a calling request is directed from a mobile station user — having (Step 641) — it is judged whether the mobile station 10 compares first the data obtained from the current position and dispatch keepout area database device of a local station, and the mobile station 10 is in the dispatch keepout area in the service area 15 (Step 642). Or the mobile station 10 does not exist in the dispatch keepout area of the service area 15 as a result of a judgment, when it is a mobile station outside an object, the calling request message which contains the telephone number of call destination telephone (not shown) to the base station 11 is sent out, and the usual dispatch procedure is started (Steps 645-650). It judges with it being in the dispatch keepout area of the service area 15, and when it is not a mobile station outside an object, the mobile station 10 stops dispatch operation, notifies of it being prohibition on dispatch with a sound etc. to a user, and forbids dispatch (Step 644).

[0057]A base station and a control center may have a positioning device described here instead of a mobile station. Such an example is explained with reference to drawing 15 — drawing 18.

[0058]Drawing 15 is what showed the composition of the mobile station, and the difference from drawing 1 mentioned above is that the mobile station 10 does not have a positioning device. Since other composition is the same as that of drawing 1, it attaches the same directions numerals as a corresponding portion, and omits explanation. Drawing 16 is what showed the composition of the base station, and the difference from said drawing 3 is having the electric wave transfer time measuring device 305 from a mobile station. Since other composition is the same as that of drawing 3, it attaches the same directions numerals as a corresponding portion, and omits explanation. Drawing 17 is what showed the composition of the control center, and the difference from drawing 4 is that the control center has the device 405 which positions a mobile station based on the report from each base station. This mobile station positioning device 405 computes the position of a mobile station based on the measurement data from each base station, and the central arithmetic unit 404 may be made to perform it. Since other composition is the same as that of drawing 4, it attaches the same directions numerals as a corresponding portion, and omits explanation.

[0059]Here, mobile station positioning in the control center 14 is explained, referring to drawing 18. As mentioned above, if call operation of the mobile station 10 is performed by the base stations 11-13, the mobile station 10 sends out a reception confirmed message to the timing specified by a base station by them according to it. Although the mobile station 10 shall be in the service area 15 of the base station 11 at this time, the transmit radio wave from the mobile station 10 shall be received simultaneously in other base stations

12 and 13. The base stations 11-13 synchronize under management of the control center 14.

Therefore, it is possible to measure time until the electric wave which the mobile station 10 sent arrives at each base station in each base station, and the distance to the mobile station 10 can be acquired from each base station.

Therefore, when the control center 14 obtains each measurement time of concentration or range from each base station, The position of the mobile station 10 can be pinpointed by asking for the intersection of three circles, the circle of the radius L1 centering on the base station 11, the circle of the radius L2 centering on the base station 12, and the circle of the radius L3 centering on the base station 13, as shown in drawing 18.

[0060]The device which receives the signal from the transmitter can substitute the positioning device described here for the transmitter installed so that each arrival/dispatch keepout area might be covered, and a mobile station. It explains with reference to drawing 19 and drawing 20.

[0061]Drawing 19 is what showed the composition of the system, and the transmitter 23 is sending the signal of a certain specific frequency so that the arrival/dispatch prohibition area 22 may be covered. In the case of the system using a spread spectrum, What sends the signal which had a certain fixed time delay to the timing managed by a system also with the signal diffused in the same spread code series as the spread code series which may send the signal diffused in the specific spread code series, and is used for a telephone call also on the same frequency as the frequency used for a telephone call may be sufficient.

[0062]Drawing 20 is what showed the composition of the mobile station, and the difference from drawing 15 is not having a mail arrival keepout area database device and a dispatch keepout area database device, but having arrival/dispatch inhibiting-signal receiving set 108. If the antenna system 101 may prepare independently the thing only for arrival/dispatch inhibiting signal and can share it, it may be made common use.

[0063]As mentioned above, if call operation of the mobile station 10 is performed by the base stations 11-13, it will be judged by them whether the mobile station 10 is in the position which can receive arrival/dispatch inhibiting signal. Since the specific frequency signal from the transmitter 23 is receivable if this judgment is in arrival/dispatch prohibition area, that signal only judges whether it is receivable at a its present location point. If arrival/dispatch inhibiting signal is receivable, it will tell to a base station that it is in arrival/dispatch prohibited position. Thereby, it can know that the mobile station 10 is in arrival/dispatch keepout area in the base station 11.

[0064]This invention is not limited only to this example, and it may be made for a base station or a control center to, have the message record and playback equipment described here for example, instead of a mobile station. In this case, I hear that a base station or a control center will manage the difference from the example described above, and it has a message from a sending agency. Although a line connection for a mobile station to ***** the message from a sending agency is unnecessary, when a mobile station user wants to reproduce the message from a sending agency, it will be necessary to establish a circuit with a control center via a base station or a base station, and to newly acquire data.

[0065]A base station or a control center may have simultaneously the message record and playback equipment described here not only in a mobile station. In this case, when recording the message from a sending agency, and the message record and playback equipment in the mobile station side fill and it is impossible to record more by data, That is notified to a base station or a control center, and message record and playback equipment are switched to the thing by the side of a base station or a control center from the thing by the side of a mobile station. The message from a sending agency can be recorded without being influenced by the storage capacity of the message record and playback equipment which a mobile station has by this. Therefore, the message from the recorded dispatch origin is thoroughly renewable the same with having performed switching operation at the time of record by switching to the thing by the side of a base station side or a control center from the thing by the side of a mobile station also at the time of reproduction.

[0066]It is not limited only to the example which this invention mentioned above, and various modification, such as a movable body system using a satellite, can be considered, for example.

[0067]

[Effect of the Invention]In the mobile communications system which has a control center which manages mobile communications system ***** and the mobile station concerning this invention, a base station, and two or more base stations as explained above, It has a means to detect whether a mobile station is in a mail arrival prohibited position, and a means which does not notify a user of a mobile station call when it is in a mail arrival prohibited position by a detection result, Since he is trying not to establish a communication line between a mobile station and a base station when it is in a mail arrival prohibited position, the mail arrival act in

the place which makes others trouble is controllable by forbidding a mobile station from sounding a mail arrival calling sound with the current position of a ** office, or forbidding communication line establishment.

[0068]According to this invention, the message record and the reproduction means which records and reproduces the message from a sending agency are established, Since the message from a sending agency is recorded and he is trying to reproduce the message from the dispatch origin according to the demand from a mobile station user when it is in said mail arrival prohibited position, within the mail arrival keepout area of a mobile station, The message from a sending agency is recorded without notifying a mobile station user of mail arrival, and the access-to-information opportunity loss of the mobile station user in the field is avoidable, filling the demand of not making you trouble on the outskirts within a **** keepout area with enabling it to reproduce later.

[0069]A means to detect whether a mobile station is in a dispatch prohibited position according to other inventions concerning this application, Since he is trying not to establish a communication line between a mobile station and a base station if it has a means to notify a mobile station user of that and is in a dispatch prohibited position, when it is in a dispatch prohibited position from a detection result, The dispatch act in the place which makes others trouble is controllable by forbidding the communication line establishment for mobile station dispatch with the current position of a mobile station.

[Translation done.]

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TECHNICAL FIELD

[Industrial Application]This invention relates to the mobile communications system used by the technical field of the phone system using what is called a cellular phone system and a satellite, etc., for example.

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PRIOR ART

[Description of the Prior Art]The mobile communications system, for example, what is called a cellular phone system, is constituted, for example like drawing 2.

[0003]In drawing 2, it should be located in the service area 15 of the base station 11 with the mobile station 10, and the control center 14 should have call (mail arrival) directions of the mobile station 10 via the ordinary public circuit 21 now. At this time, the control center 14 directs the call of the mobile station 10 to two or more base stations registered by then.

[0004]Now, if the call of the mobile station 10 should be directed also to the base station 11, the base station 11 sends out the call message of the mobile station 10 in the service area 15 of the base station 11. The mobile station 10 which is in the service area 15 of the base station 11, If a reception confirmed message is transmitted to the base station 11 according to the call message of the base station 11, it tells that sound a calling sound and a user has mail arrival and a user responds to mail arrival, the message of mail arrival acceptance is sent out to the base station 11. The base station's 11 reception of this will send out connection and the line connection prompting message which points, assigns the mobile station 10 and shows a channel, timing, etc. to the control center 14 for a line connection. Thereby, via the base station 11 and the control center 14, the mobile station 10 can establish a communication line and can telephone to the telephone on a public line.

[0005]When the user of the mobile station 10 transmits the calling request message which contains the telephone number of a call destination to the base station 11 in the example of drawing 2, the base station 11, The confirmation of receipt and channel allocation of the message, timing, etc. are transmitted to the mobile station 10, and a calling request message is handed over to the control center 14. The control center 14 starts call operation of a call destination, and establishes the communication line of the mobile station 10 and a call destination via the base station 11. If a call destination user answers a call, the control center 14 can talk over the telephone by pointing to a line connection to the mobile station 10 via the base station 11.

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EFFECT OF THE INVENTION

[Effect of the Invention]In the mobile communications system which has a control center which manages mobile communications system ***** and the mobile station concerning this invention, a base station, and two or more base stations as explained above, It has a means to detect whether a mobile station is in a mail arrival prohibited position, and a means which does not notify a user of a mobile station call when it is in a mail arrival prohibited position by a detection result, Since he is trying not to establish a communication line between a mobile station and a base station when it is in a mail arrival prohibited position, the mail arrival act in the place which makes others trouble is controllable by forbidding a mobile station from sounding a mail arrival calling sound with the current position of a ** office, or forbidding communication line establishment.

[0068]According to this invention, the message record and the reproduction means which records and reproduces the message from a sending agency are established, Since the message from a sending agency is recorded and he is trying to reproduce the message from the dispatch origin according to the demand from a mobile station user when it is in said mail arrival prohibited position, within the mail arrival keepout area of a mobile station, The message from a sending agency is recorded without notifying a mobile station user of mail arrival, and the access-to-information opportunity loss of the mobile station user in the field is avoidable, filling the demand of not making you trouble on the outskirts within a **** keepout area with enabling it to reproduce later.

[0069]A means to detect whether a mobile station is in a dispatch prohibited position according to other inventions concerning this application, Since he is trying not to establish a communication line between a mobile station and a base station if it has a means to notify a mobile station user of that and is in a dispatch prohibited position, when it is in a dispatch prohibited position from a detection result, The dispatch act in the place which makes others trouble is controllable by forbidding the communication line establishment for mobile station dispatch with the current position of a mobile station.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention]By the way, in the above systems, Even if the mobile station was in what kind of place, when communication was physically possible, mobile station arrival and mobile station dispatch were always performed, are a place which inconveniences others in sounding the calling sound of a mobile station or talking, and did not have a means to forbid such an act.

[0007]For example, becoming troublesome [the sending-and-receiving act in the seat of vehicles such as the Shinkansen and a bus, / other passengers] is pointed out, and the complaint is already brought near by the railroad company etc. The cellular-phone call act to the gallery in the golf tournament hall may become the hindrance of advance of a game, while having an adverse effect on the psychology of the player under game. It is pointed out that the sending-and-receiving act in public facilities, such as the hall of a concert, a waiting room of a hospital or a library, and a court, not only makes other listeners and users trouble, but serves as hindrance of a performance, business, and official business.

[0008]There is the purpose of this invention in providing the mobile communications system which can reduce the disadvantage of the access-to-information opportunity loss by having been forbidden while it is such and also can forbid the mobile station arrival act and dispatch act in a place which inconvenience people.

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MEANS

[Means for Solving the Problem]In a mobile communications system which has a control center which manages a mobile station, a base station, and two or more base stations in order that an invention of 1 concerning this application may solve a technical problem mentioned above, When it has a means to detect whether a mobile station is in a mail arrival prohibited position, and a means which does not notify a user of a mobile station call when it is in a mail arrival prohibited position by a detection result and is in a mail arrival prohibited position, it is characterized by not establishing a communication line between a mobile station and a base station.

[0010]Here, message record and a reproduction means which records and reproduces a message from a sending agency are established, when it is in said mail arrival prohibited position, a message from a sending agency is recorded, and it is possible to reproduce a message from the dispatch origin according to a demand from a mobile station user. At this time, it is preferred to notify a mobile station user of a message from a sending agency being recorded by a certain means. What is necessary is just to provide this message record and reproduction means in any 1 of a mobile station, a base station, and control centers, or two or more.

[0011]A means to detect whether mobile station of other inventions concerning this application is in a dispatch prohibited position in order to solve a technical problem mentioned above, If it has a means to notify a mobile station user of that and is in a dispatch prohibited position when it is in a dispatch prohibited position from a detection result, it is characterized by not establishing a communication line between a mobile station and a base station.

[0012]In these inventions, as said detection means, A positioning device for measuring a position of this mobile station that a mobile station has, and a mobile station, A thing provided with a data base device which specifies a mail arrival keepout area which either a base station or a control center has, Or a thing provided with a positioning device for measuring a position of a mobile station which a base station and a control center have, and a data base device which specifies a mail arrival keepout area which a mobile station, a base station, or a control center has can be used. As said detection means, a thing provided with a signal generation device which covers applicable area established in each mail arrival prohibition area, and an applicable inhibiting-signal receiving set which a mobile station has can be used. Such a detection means may be made to be managed by time information and priority information for every mobile station.

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MEANS

[Means for Solving the Problem]In a mobile communications system which has a control center which manages a mobile station, a base station, and two or more base stations in order that an invention of 1 concerning this application may solve a technical problem mentioned above, When it has a means to detect whether a mobile station is in a mail arrival prohibited position, and a means which does not notify a user of a mobile station call when it is in a mail arrival prohibited position by a detection result and is in a mail arrival prohibited position, it is characterized by not establishing a communication line between a mobile station and a base station.

[0010]Here, message record and a reproduction means which records and reproduces a message from a sending agency are established, when it is in said mail arrival prohibited position, a message from a sending agency is recorded, and it is possible to reproduce a message from the dispatch origin according to a demand from a mobile station user. At this time, it is preferred to notify a mobile station user of a message from a sending agency being recorded by a certain means. What is necessary is just to provide this message record and reproduction means in any 1 of a mobile station, a base station, and control centers, or two or more.

[0011]A means to detect whether mobile station of other inventions concerning this application is in a dispatch prohibited position in order to solve a technical problem mentioned above, If it has a means to notify a mobile station user of that and is in a dispatch prohibited position when it is in a dispatch prohibited position from a detection result, it is characterized by not establishing a communication line between a mobile station and a base station.

[0012]In these inventions, as said detection means, A positioning device for measuring a position of this mobile station that a mobile station has, and a mobile station, A thing provided with a data base device which specifies a mail arrival keepout area which either a base station or a control center has, Or a thing provided with a positioning device for measuring a position of a mobile station which a base station and a control center have, and a data base device which specifies a mail arrival keepout area which a mobile station, a base station, or a control center has can be used. As said detection means, a thing provided with a signal generation device which covers applicable area established in each mail arrival prohibition area, and an applicable inhibiting-signal receiving set which a mobile station has can be used. Such a detection means may be made to be managed by time information and priority information for every mobile station.

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OPERATION

[Function]The mail arrival act in the place which makes others trouble is controllable by forbidding a mobile station from sounding a mail arrival calling sound with the current position of a mobile station, or forbidding communication line establishment by the above-mentioned composition. By or the thing record the message from a sending agency within the mail arrival keepout area of a mobile station, without notifying a mobile station user of mail arrival, and it enables it to reproduce later. The access-to-information opportunity loss of the mobile station user in the field is avoidable, filling the demand of not making you trouble on the outskirts within a *** keepout area.

[0014]The dispatch act in the place which makes others trouble is controllable by forbidding the communication line establishment for mobile station dispatch with the current position of a mobile station.

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EXAMPLE

[Example]Hereafter, one example of this invention is described, referring to drawing 1 – drawing 4. Drawing 1 shows the composition of the mobile station 10 used for what is called a cellular phone system that is a kind of a bidirectional mobile communications system, and shows drawing 2 the so-called example of the cellular phone system by which this mobile station 10 is used.

[0016]That is, drawing 2 is the so-called key map of a cellular phone system, and shows the so-called example of the cellular phone system which has the three base stations 11–13. The control center 14 has a role rate which connects between control of each base stations 11–13, and a base station, a base station, and the public line 21. For these base station control and line connections, it is connected by the connecting lines 18–20 between the control center 14 and each base stations 11–13, respectively. Each base stations 11–13 have the service areas 15–17 whose communication the base station enables physically, respectively.

In *****, the above-mentioned mobile station 10 is in the service area 15 of the base station 11, and is in the state where it can telephone to the telephone (not shown) on a public line, or other mobile stations (not shown), via the base station 11 and the control center 14.

[0017]Drawing 1 shows an example of the composition of such a mobile station 10. In the receiving system of the mobile station 10, it is received by the antenna system 101, it gets over with the receiving set 102, and the signal transmitted from the base station 11 is inputted into the central arithmetic unit 104. If this demodulation signal is a control signal, it will be analyzed within the central arithmetic unit 104, and if a demodulation signal is a call signal, the call notification device 122 will be driven and a user will be told. If the demodulation signal from the receiving set 102 is an audio signal, it will be handed over to the speech processing unit 111, and will be outputted by the loudspeaker 113 as a sound.

[0018]In the transmission system of the mobile station 10, a sound is changed into an electric signal with the microphone 112, and the central arithmetic unit 104 incorporates this input voice signal via the speech processing unit 111. Or the central arithmetic unit 104 creates send data by demand of the situation or a user. The sending set 103 sends and becomes irregular and the output signal from the central arithmetic unit 104 is transmitted to a base station via the antenna system 101.

[0019]The positioning device 105 deduces the current position of the mobile station 10 from the reception radio wave for positioning of the antenna system 101. The mobile station 10 can report the current position of a local station to a base station, when the mail arrival instruction request from a base station occurs. As a positioning electric wave, GPS (Global Positioning System) etc. to which use is generally accepted can be used. In this case, the antenna system 101 may be independently prepared as a positioning system, and as long as it can use in common, it may be shared.

[0020]The central arithmetic unit 104 judges whether the current position of the mobile station 10 is in a mail arrival keepout area from the current position from the data and the positioning device 105 from the mail arrival keepout area database device 121. When judged with the current position of the mobile station 10 being in a mail arrival keepout area, the call notice prohibition function part 106 in the central arithmetic unit 104 calls, and he forbids the drive of the notification device 122, and is trying not to notify a user, even if a demodulation signal is a call signal. If some [one / of the mobile station 10, the base station 11, and the control centers 14] has a mail arrival keepout area database device, it is enough.

[0021]The central arithmetic unit 104 hands over and records the voice data originally handed over to the speech processing unit 111 on message record and the playback equipment 116, or, That record data can be reproduced from message record and the playback equipment 116, and this data can be made to output from

the loudspeaker 113 via the speech processing unit 111. The message from a sending agency can be recorded by this, or it can reproduce. The data which message record and the playback equipment 116 treat may be not only voice data but alphabetic data, graphics data, etc. In this case, it is good also as various outputting parts like indicators, such as LCD (liquid crystal display) which passed not the loudspeaker 113 through the speech processing unit 111 but the user interface device 115 mentioned later as an output destination change at the time of reproduction.

[0022]The user interface device 115 is for handing over the demand which the mobile station user inputted to the central arithmetic unit 104, or displaying the information from the central arithmetic unit 104 on a mobile station user's indicator. A mobile station user can be notified of there being a message recorded on message record and the playback equipment 116 by this, and a mobile station user can direct reproduction of the message.

[0023]The central arithmetic unit 104 judges whether the current position of the mobile station 10 is in a dispatch keepout area from the current position from the data and the positioning device 105 from the dispatch keepout area database device 131. When it is in a dispatch keepout area as a result of a judgment, a mobile station user is notified of that by the sound or the beep sound, and an alarm lamp using the notification device 132 in a dispatch keepout area. A user shall be notified of the notification device 132 in a dispatch keepout area in this example by the sound or a beep sound, and the speech processing unit 111 and the loudspeaker 113 may realize it. If some [one / of the mobile station 10, the base station 11, and the control centers 14] has a dispatch keepout area database device, it is enough.

[0024]Drawing 3 shows the composition of the base station 11. In the receiving system of the base station 11, it is received by the antenna system 301, it gets over with the receiving set 302, and the signal transmitted from the mobile station 10 is inputted into the central arithmetic unit 304.

[0025]If a demodulation signal is a control signal, it will be analyzed within the central arithmetic unit 304, and if necessary, the information will be sent to the control center 14 via the communication apparatus 310 and the connecting line 18 with a control center. If it is an audio signal, it will be similarly sent to the control center 14 via the communication apparatus 310 and the connecting line 18 with a control center.

[0026]In a transmission system, the control signal sent via the communication apparatus 310 and the connecting line 18 with the control center 14 to a control center, If the central arithmetic unit 304 is passed and the information needs to transmit to the mobile station 10, the central arithmetic unit 304 hands it over to the sending set 303, and it will become irregular and it will be transmitted to 15 in a service area from the antenna system 301. The sending set 303 hands over and becomes irregular from the central arithmetic unit 304, and the audio signal addressed to mobile station 10 sent from the control center 14 is also transmitted into the service area 15 from the antenna system 301. Furthermore, the central arithmetic unit 304 judges whether the current position of the mobile station 10 is in a mail arrival keepout area from the current position which received the report from the data and the mobile station 10 from the mail arrival keepout area database device 321. The central arithmetic unit 304 judges whether the current position of the mobile station 10 is in a dispatch keepout area from the current position which received the report from the data and the mobile station 10 from the dispatch keepout area database device 331.

[0027]Drawing 4 shows the composition of the control center 14. The control and the audio signal from the base station 11 are inputted into the communication apparatus 411 with a base station group from the connecting line 18, and are handed over by the central arithmetic unit 404. Among them, an audio signal and some control signals will be sent via the communication apparatus 412 with a public line, if a communications partner is a telephone (not shown) on the public line 21. The audio signal and control signal addressed to mobile station 10 from a telephone are inputted into the communication apparatus 412 with a public line, and are handed over to the central arithmetic unit 404. [on the public line 21] And it is sent to the base station 11 via the communication apparatus 411 and the connecting line 18 with a base station group. The mail arrival keepout area database device 421 has the same function as the mail arrival keepout area database device 321 in the base station 11 of above-mentioned drawing 3. The dispatch keepout area database device 431 has the same function as the dispatch keepout area database device 331 in the above-mentioned base station 11.

[0028]It explains referring to the flow chart shown in drawing 5 and drawing 6, and the Table 1 and 2 for the example described above. Here, it explains as what has a mail arrival prohibition database device in the base station 11.

[0029]If the telephone number of the mobile station 10 is inputted from the telephone (not shown) on the public line 21, the telephone number will be sent to the control center 14 (Step 501). The control center 14

points to the call of the mobile station 10 to the base stations 11-13 with the telephone number of the mobile station 10 (Step 502), and each base station sends out the message of a mobile station call (Step 503). The mobile station 10 which is in the service area of the base station 11 sends out the confirmation of receipt of a call message, and the currency information of a local station to the base station 11 according to the call message from the base station 11 (Steps 504 and 506). As currency information, the information on the lat/long obtained from the positioning device 105 is given. At this time, it requires of the purport and the base station 11 a mobile station user wants to receive a message also within a mail arrival keepout area, and there may also be procedure accepted.

[0030]The base station 11 which received the currency information of the call message reception check and the mobile station 10, The data obtained from the current position and mail arrival keepout area database device of the mobile station 10 is compared, and it is judged whether the mobile station 10 is in the mail arrival keepout area in the service area 15 (Step 507). Here, as a mail arrival keepout area database, as shown in Table 1, it is possible to comprise the lat/long and the radius of a field of the center spots of a mail arrival keepout area. It can be judged whether this exists from the lat/long of the mobile station 10, the lat/long of center spots, and a radius in the circle by which the mobile station 10 is surrounded in the radius from center spots. Mail arrival can be preferentially done also within a mail arrival keepout area by enabling it to control a mail arrival keepout area by date time, or repealing a mail arrival keepout area to a specific mobile station (Step 508).

[0031]

[Table 1]

No.	サービスエリア	中心地点（緯度、経度）	半径	時刻指定	対象外移動局番号
1	15	北緯45度00分00秒、 東経145度00分00秒	200m	92年12月30日12:00 ～ 93年1月3日23:00	01,33,45,...

[0032]When it is distinguished from NO (the mobile station 10 does not exist in the mail arrival keepout area of the service area 15) at Step 507 as a result of an above-mentioned judgment, or when it is distinguished from YES (it is a mobile station outside an object) at Step 508, it progresses to Step 511 of drawing 6. on the other hand, when distinguished from NO at Step 508, Judge with the mobile station 10 being in the mail arrival keepout area of the service area 15 as for the central arithmetic unit 304 (Step 507), and when it is not the above-mentioned mobile station outside an object, It reports that the mobile station 10 is in a mail arrival keepout area to the mobile station 10 in the base station 11 (Step 509), and it is asked whether message record is possible (Step 510). When distinguished from YES at this step 510, it progresses to Step 521 of drawing 6, and when distinguished from NO, it progresses to Step 529. In this step 529, call operation of the mobile station 10 is forbidden and that is notified also to the control center 14. In this case, the user of the telephone on the public line 21 can know that a telephone will not be connected from the control center 14 by the same beep as [with a sound / a notice or during the conversation]. Then, it progresses to Step 517 of drawing 6, and the whole operation is ended.

[0033]In Step 511 of drawing 6, the base station 11 performs assignment of a channel required for a telephone call, directions of timing, etc. to the mobile station 10, and it directs to carry out a user call notice. Simultaneously, the line connection of the base station 11 and the telephone (not shown) on the public line 21 is required from the control center 14 (Step 512). And when the user of the mobile station 10 takes a receiver according to a call, The mobile station 10 is called, stops a notice, and advances a line connection request to the base station 11 (Step 513), the base station 11 notifies a line connection to the control center 14 in response to it, and a line connection is directed to the mobile station 10 (Step 514). Thereby, the telephone (not shown) on a public line and the circuit of the mobile station 10 are connected, and a telephone call is performed (Step 515). And the whole operation is ended after a telephone call is completed (Step 516) (Step 517).

[0034]On the other hand, by the mobile station 10 being in a mail arrival keepout area, if message record is possible, in Step 521, the base station 11 will perform assignment of a channel required for a telephone call, directions of timing, etc. to the mobile station 10. It is not necessary to use the channel assigned to a telephone call only as the channel of one of the two which receives from the base station 11 to the mobile

station 10 unlike the usual mobile station call, and to assign the channel from the mobile station 10 to the base station 11 at this time. The base station 11 requires the line connection of the base station 11 and the telephone (not shown) on the short course circuit 21 from the control center 14 (Step 522). Next, the mobile station 10 advances a line connection request to the base station 11, without calling a mobile station user (Step 523), and the base station 11 notifies a line connection to the control center 14 in response to it. The base station (Step 524) 11 which directs a line connection to the mobile station 10 tells to a sending agency that the mobile station 10 exists in a mail arrival keepout area, and requires transmission of a message (525). The mobile station 10 will record this on message record and the playback equipment 116, if the message from a sending agency comes (Step 526). The mobile station 10 ends record of a message, when a sending agency stops transmission of a message, and a telephone is hung up or it passes predetermined time (Step 527). Simultaneously, it memorizes that there was a message from a sending agency, for example in form as shown in Table 2 in the central arithmetic unit 104, or message record and playback equipment 116 (Step 528).

[0035]

[Table 2]

No.	発信元電話番号	発信者名	記録開始時間	記録時間
	03-xxxx-△△△△	□□○○	93年5月5日12:00	00時間03分00秒

[0036]In this table 2, No. is a number for taking correspondence with the message data recorded in message record and the playback equipment 116.

An addresser's telephone number is memorizable in a system which is notified from a base station, and an addresser name is memorizable if there is data which the mobile station user stored in the storage device in a mobile station with the telephone number beforehand.

[0037]It notifies of having outputted the mobile station 10 to the display device in which the telephone number of such dispatch origin, a name, recording start time, the record time, etc. were provided by the user interface device 115, or it being a sound and having had message record to a mobile station user (Step 528). However, when the mobile station 10 exists in a mail arrival keepout area, Since it cannot notify with a sound, when notifying with a sound, As shown in drawing 7, when it confirms periodically whether the mobile station 10 exists in a mail arrival keepout area (Step 531) and comes out of a mail arrival keepout area, If it confirms whether there is any unreproduced message recorded when it was in a mail arrival keepout area (Step 532) and there is an unreproduced message, It can notify of that to a mobile station user with a sound using the buzzer etc. which were formed in the user interface device 115 (Step 533). by these notices, as shown in drawing 8, a mobile station user operates the key in which reproduction of the recorded message was provided at the user interface device — requiring (Step 541). If the mobile station 10 has a recorded message (Step 542), the message currently recorded will be reproduced using message record and the playback equipment 116 (Step 543).

[0038]Instead of a base station having, as shown in drawing 4, the control center 14 may have the mail arrival keepout area database device described here. This case is explained with reference to the flow chart shown in drawing 9. In this case, from the step which inputs the telephone number of the mobile station 10 from the telephone (not shown) on the public line 21 of above-mentioned drawing 2. The mobile station 10 which is in the service area of the base station 11 according to the call message from the base station 11, Since the step which sends out the confirmation of receipt of a call message and the currency information of a local station to the base station 11 is the same as Step 501 to the step 506 of drawing 5 mentioned above, it does not illustrate but explanation is omitted.

[0039]In Step 506 of drawing 5, the base station 11 which received the currency information of the call message reception check and the mobile station 10, After progressing to Step 557 of drawing 9 and handing over the current position of the mobile station 10 to the control center 14, The central arithmetic unit 404 of drawing 4 compares the data obtained from the mail arrival keepout area database device 431, and it is judged whether the mobile station 10 is in the mail arrival keepout area in the service area 15 (Step 558).

[0040]Or the mobile station 10 does not exist in the mail arrival keepout area of the service area 15 as a result of an above-mentioned judgment, when it is a mobile station outside an object, it is directed that the control center 14 establishes a communication line with the mobile station 10 to the base station 11 (Step 562). A base station performs assignment of a channel, directions of timing, etc. based on these directions, and it

directs to carry out a user's call notice (Step 563). And if the user of the mobile station 10 takes a receiver according to a call, call the mobile station 10, it stops a notice and the base station 11 is received, A line connection request is advanced (Step 564), the base station 11 notifies a line connection with the mobile station 10 to the control center 14 in response to it, and a line connection is directed to the mobile station 10 (Step 565). Thereby, the telephone (not shown) on a public line and the telephone call of the mobile station 10 are performed (Step 566).

[0041]On the other hand, it judges with the central arithmetic unit 404 being in the mail arrival keepout area of the service area 15 as for the mobile station 10, reports that the mobile station 10 is in the base station 11 in a mail arrival keepout area when it is not a mobile station outside an object (Step 560), and directs to stop call operation of the mobile station 10. Thereby, the base station 11 gives notice of it being in a mail arrival keepout area to the mobile station 10, and forbids a user call notice to it (Step 561). At this time, the control center 14 can tell that notify the user of the telephone on the public line 21 with a sound that, or send out the same beep as during the conversation to him, and a telephone does not lead to him.

[0042]Mobile station 10 self may have a mail arrival keepout area database instead of a base station or a control center. This case is explained with reference to the flow chart shown in drawing 10 and drawing 11.

[0043]In Step 571 of drawing 10, if the telephone number of the mobile station 10 is inputted from the telephone (not shown) on the public line 21, the telephone number will be sent to the control center 14. The control center 14 points to the call of the mobile station 10 to the base stations 11-13 with the telephone number of the mobile station 10 (Step 572), and each base station sends out the message of a mobile station call (Step 573). The mobile station 10 which is in the service area of the base station 11, The call message from the base station 11 is received (Step 574), The central arithmetic unit 104 compares the currency information from the positioning device 105 with the data from the mail arrival prohibition database device 109, and it is judged whether a local station is in the mail arrival keepout area in the service area 15 (Step 575). As a result, or the mobile station 10 does not exist in the mail arrival keepout area of the service area 15, when it is a mobile station outside an object, it calls to the base station 11 and the confirmation of receipt of a message is sent out (Step 581). if it is received, to the mobile station 10, the base station 11 will perform assignment of a channel, directions of timing, etc., and will carry out a user's call notice -- as -- directing (Step 582). Circuit establishment with the telephone (not shown) on the public line 21 is required of the control center 14 (Step 583). And if the user of the mobile station 10 takes a receiver according to a call, call the mobile station 10, it stops a notice and the base station 11 is received, A line connection request is advanced (Step 584), the base station 11 notifies a line connection to the control center 14 in response to it, and a line connection is directed to the mobile station 10 (Step 585). Thereby, the telephone (not shown) on a public line and the telephone call of the mobile station 10 are performed (Step 586).

[0044]On the other hand, when the central arithmetic unit 104 judges with the mobile station 10 being in the mail arrival keepout area of the service area 15, and not being a mobile station outside an object, it is required to notify the base station 11 that the mobile station 10 is in a mail arrival keepout area (Step 591), and to stop call operation of the mobile station 10. Thereby, the base station 11 notifies that also to the control center 14 (Step 592). And the control center 14, the base station 11, and the mobile station 10 stop user call notice operation (Step 593). At this time, the control center 14 can tell that notify the user of the telephone on the public line 21 of that with a sound, or send out the same beep as during the conversation to him, and a telephone does not lead to him.

[0045]Next, it explains, referring to the flow chart and Table 3 which are shown in drawing 12 for the case where a dispatch prohibition process is performed. Here, it explains as what has a dispatch prohibition database device in the base station 11.

[0046]

[Table 3]

No.	サービスエリア	中心地点（緯度、経度）	半径	時刻指定	対象外移動局番号
1	17	北緯35度00分00秒、 東経140度00分00秒	100m	92年12月30日12:00 ～ 93年9月1日24:00	01,33,45,...

[0047]If the user of the mobile station 10 of said drawing 1 demands dispatch to the telephone (not shown) on

other mobile stations (not shown) or the public line 21, the mobile station 10 sends out a calling request message to the base station 11 with the current position of a call destination telephone number and a local station (Step 601). As currency information, the information on the lat/long obtained from the positioning device 105 is given. At this time, it requires of the purport and the base station 11 to which a mobile station user wants to send also within a dispatch keepout area, and there may also be procedure accepted. It is judged whether the base station 11 which received the calling request message compares the data obtained from the current position and dispatch keepout area database device of the mobile station 10, and the mobile station 10 is in the dispatch keepout area in the service area 15 (Step 602).

[0048]Here, as a dispatch keepout area database, as shown in Table 3, it is possible to comprise the lat/long and the radius of a field of the center spots of a dispatch keepout area. It can be judged whether this exists from the lat/long of the mobile station 10, the lat/long of center spots, and a radius in the circle by which the mobile station 10 is surrounded in the radius from center spots. Dispatch can be preferentially done also within a dispatch keepout area by enabling it to control a dispatch keepout area by date time, or repealing a dispatch keepout area to a specific mobile station (Step 603).

[0049]Or the mobile station 10 does not exist in the dispatch keepout area of the service area 15 as a result of an above-mentioned judgment, when it is a mobile station outside an object, the base station 11 performs assignment of a channel required for a telephone call, directions of timing, etc. to the mobile station 10 (Step 605). And the base station 11 requires the call of the telephone (not shown) of a call destination from the control center 14 (Step 606). If the user of the telephone (not shown) of a call destination takes a receiver according to a calling sound, the control center 14 will be notified to the base station 11, and the communication line of the base station 11 and call destination telephone (not shown) is connected (Step 607). The base station 11 can talk over the telephone by performing line connection directions (Step 608) to the mobile station 10.

[0050]It judges with it being in the dispatch keepout area of the service area 15, and reports that the mobile station 10 is in a dispatch keepout area to the mobile station 10 in the base station 11 when the mobile station 10 is not a mobile station outside an object (Step 604), and dispatch operation of the mobile station 10 is stopped. It is not necessary to connect anything to the control center 14. In this case, to a user, the mobile station 10 notifies of it being prohibition on dispatch with a sound etc., and forbids dispatch (Step 610).

[0051]The control center 14 may have the dispatch keepout area database device described here instead of a base station. An example in this case is explained with reference to the flow chart shown in drawing 13.

[0052]If the user of the mobile station 10 demands dispatch to the telephone (not shown) of a call destination, the mobile station 10 sends out a calling request message to the base station 11 with the current position of a call destination telephone number and a local station (Step 621). The base station 11 hands over the telephone call number received from the mobile station 10, and the currency information of the mobile station 10 to a control center (Step 622). It is judged whether the control center 14 compares the data obtained from the current position and the dispatch keepout area database device 431 of the mobile station 10, and the mobile station 10 is in the dispatch keepout area in the service area 15 (Step 623).

[0053]When the mobile station 10 does not exist in the dispatch keepout area of the service area 15 as a result of an above-mentioned judgment, or when it is a mobile station outside an object, The control center 14 points to a line connection with the mobile station 10 to the base station 11 (Step 626), the base station 11 — the mobile station 10 — channel allocation, timing, etc. — directing (Step 627) — the call of call destination telephone (not shown) is required of the control center 14 (Step 628). If the user of the telephone (not shown) of a call destination takes a receiver according to a calling sound, the control center 14 can be notified to the base station 11 (Step 629), and the base station 11 can talk over the telephone by performing line connection directions (Step 630) to the mobile station 10.

[0054]It judges with it being in the dispatch keepout area of the service area 15, and reports that the mobile station 10 is in a dispatch keepout area to the mobile station 10 via the base station 11 in the control center 14 when it is not a mobile station outside an object, and dispatch operation of the mobile station 10 is stopped (Step 632). In this case, to a user, the mobile station 10 notifies of it being prohibition on dispatch with a sound etc., and forbids dispatch (state step 633).

[0055]Mobile station 10 self may have a dispatch keepout area database instead of the base station 11 or the control center 14. An example in this case is explained with reference to the flow chart shown in drawing 14.

[0056]a calling request is directed from a mobile station user — having (Step 641) — it is judged whether the mobile station 10 compares first the data obtained from the current position and dispatch keepout area

database device of a local station, and the mobile station 10 is in the dispatch keepout area in the service area 15 (Step 642). Or the mobile station 10 does not exist in the dispatch keepout area of the service area 15 as a result of a judgment, when it is a mobile station outside an object, the calling request message which contains the telephone number of call destination telephone (not shown) to the base station 11 is sent out, and the usual dispatch procedure is started (Steps 645-650). It judges with it being in the dispatch keepout area of the service area 15, and when it is not a mobile station outside an object, the mobile station 10 stops dispatch operation, notifies of it being prohibition on dispatch with a sound etc. to a user, and forbids dispatch (Step 644).

[0057]A base station and a control center may have a positioning device described here instead of a mobile station. Such an example is explained with reference to drawing 15 - drawing 18.

[0058]Drawing 15 is what showed the composition of the mobile station, and the difference from drawing 1 mentioned above is that the mobile station 10 does not have a positioning device. Since other composition is the same as that of drawing 1, it attaches the same directions numerals as a corresponding portion, and omits explanation. Drawing 16 is what showed the composition of the base station, and the difference from said drawing 3 is having the electric wave transfer time measuring device 305 from a mobile station. Since other composition is the same as that of drawing 3, it attaches the same directions numerals as a corresponding portion, and omits explanation. Drawing 17 is what showed the composition of the control center, and the difference from drawing 4 is that the control center has the device 405 which positions a mobile station based on the report from each base station. This mobile station positioning device 405 computes the position of a mobile station based on the measurement data from each base station, and the central arithmetic unit 404 may be made to perform it. Since other composition is the same as that of drawing 4, it attaches the same directions numerals as a corresponding portion, and omits explanation.

[0059]Here, mobile station positioning in the control center 14 is explained, referring to drawing 18. As mentioned above, if call operation of the mobile station 10 is performed by the base stations 11-13, the mobile station 10 sends out a reception confirmed message to the timing specified by a base station by them according to it. Although the mobile station 10 shall be in the service area 15 of the base station 11 at this time, the transmit radio wave from the mobile station 10 shall be received simultaneously in other base stations 12 and 13. The base stations 11-13 synchronize under management of the control center 14.

Therefore, it is possible to measure time until the electric wave which the mobile station 10 sent arrives at each base station in each base station, and the distance to the mobile station 10 can be acquired from each base station.

Therefore, when the control center 14 obtains each measurement time of concentration or range from each base station, The position of the mobile station 10 can be pinpointed by asking for the intersection of three circles, the circle of the radius L1 centering on the base station 11, the circle of the radius L2 centering on the base station 12, and the circle of the radius L3 centering on the base station 13, as shown in drawing 18.

[0060]The device which receives the signal from the transmitter can substitute the positioning device described here for the transmitter installed so that each arrival/dispatch keepout area might be covered, and a mobile station. It explains with reference to drawing 19 and drawing 20.

[0061]Drawing 19 is what showed the composition of the system, and the transmitter 23 is sending the signal of a certain specific frequency so that the arrival/dispatch prohibition area 22 may be covered. In the case of the system using a spread spectrum, What sends the signal which had a certain fixed time delay to the timing managed by a system also with the signal diffused in the same spread code series as the spread code series which may send the signal diffused in the specific spread code series, and is used for a telephone call also on the same frequency as the frequency used for a telephone call may be sufficient.

[0062]Drawing 20 is what showed the composition of the mobile station, and the difference from drawing 15 is not having a mail arrival keepout area database device and a dispatch keepout area database device, but having arrival/dispatch inhibiting-signal receiving set 108. If the antenna system 101 may prepare independently the thing only for arrival/dispatch inhibiting signal and can share it, it may be made common use.

[0063]As mentioned above, if call operation of the mobile station 10 is performed by the base stations 11-13, it will be judged by them whether the mobile station 10 is in the position which can receive arrival/dispatch inhibiting signal. Since the specific frequency signal from the transmitter 23 is receivable if this judgment is in arrival/dispatch prohibition area, that signal only judges whether it is receivable at a its present location point. If arrival/dispatch inhibiting signal is receivable, it will tell to a base station that it is in arrival/dispatch prohibited position. Thereby, it can know that the mobile station 10 is in arrival/dispatch keepout area in the

base station 11.

[0064] This invention is not limited only to this example, and it may be made for a base station or a control center to, have the message record and playback equipment described here for example, instead of a mobile station. In this case, I hear that a base station or a control center will manage the difference from the example described above, and it has a message from a sending agency. Although a line connection for a mobile station to ***** the message from a sending agency is unnecessary, when a mobile station user wants to reproduce the message from a sending agency, it will be necessary to establish a circuit with a control center via a base station or a base station, and to newly acquire data.

[0065] A base station or a control center may have simultaneously the message record and playback equipment described here not only in a mobile station. In this case, when recording the message from a sending agency, and the message record and playback equipment in the mobile station side fill and it is impossible to record more by data, That is notified to a base station or a control center, and message record and playback equipment are switched to the thing by the side of a base station or a control center from the thing by the side of a mobile station. The message from a sending agency can be recorded without being influenced by the storage capacity of the message record and playback equipment which a mobile station has by this. Therefore, the message from the recorded dispatch origin is thoroughly renewable the same with having performed switching operation at the time of record by switching to the thing by the side of a base station side or a control center from the thing by the side of a mobile station also at the time of reproduction.

[0066] It is not limited only to the example which this invention mentioned above, and various modification, such as a movable body system using a satellite, can be considered, for example.

[Translation done.]

* NOTICES *

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- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.**** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is a block diagram showing the composition of the mobile station in the mobile communications system as one example of this invention.

[Drawing 2] It is a block diagram showing the so-called composition of the cellular phone system as one example of this invention.

[Drawing 3] It is a block diagram showing the composition of the base station in the mobile communications system as one example of this invention.

[Drawing 4] It is a block diagram showing the composition of the control center in the mobile communications system as one example of this invention.

[Drawing 5] It is a flow chart for explaining operation of a mail arrival prohibition system in case a base station has a mail arrival keepout area database in the mobile communications system as one example of this invention.

[Drawing 6] It is a flow chart for explaining operation of a mail arrival prohibition system in case a base station has a mail arrival keepout area database in the mobile communications system as one example of this invention.

[Drawing 7] It is a flow chart for carrying out notice operation for there being a message from the dispatch origin in the mobile communications system as one example of this invention to a mobile station user.

[Drawing 8] It is a flow chart for explaining the reproduction motion of the message from the dispatch origin in the mobile communications system as one example of this invention.

[Drawing 9] It is a flow chart for explaining operation of a mail arrival prohibition system in case a control center has a mail arrival keepout area database in the mobile communications system as one example of this invention.

[Drawing 10] It is a flow chart for explaining operation of a mail arrival prohibition system in case a mobile station has a mail arrival keepout area database in the mobile communications system as one example of this invention.

[Drawing 11] It is a flow chart for explaining operation of a mail arrival prohibition system in case a mobile station has a mail arrival keepout area database in the mobile communications system as one example of this invention.

[Drawing 12] It is a flow chart for explaining operation of a dispatch prohibition system in case a base station has a dispatch keepout area database in the mobile communications system as one example of this invention.

[Drawing 13] It is a flow chart for explaining operation of a dispatch prohibition system in case a control center has a dispatch keepout area database in the mobile communications system as one example of this invention.

[Drawing 14] It is a flow chart for explaining operation of a dispatch prohibition system in case a mobile station has a dispatch keepout area database in the mobile communications system as one example of this invention.

[Drawing 15] It is a block diagram showing the composition of the mobile station which does not have a positioning device in the mobile communications system as one example of this invention.

[Drawing 16] It is a block diagram showing the composition of the base station which has an electric wave time-of-concentration measuring device from the mobile station in the mobile communications system as one example of this invention.

[Drawing 17] It is a block diagram showing the composition of the control center which has a positioning device of the mobile station in the mobile communications system as one example of this invention.

[Drawing 18] It is a block diagram for explaining positioning operation in case the base station and control

center in a mobile communications system as one example of this invention position a mobile station.

[Drawing 19] It is a block diagram showing the composition of the system containing arrival/dispatch inhibiting-signal transmitter in the mobile communications system as one example of this invention.

[Drawing 20] It is a block diagram showing the composition of the mobile station which has arrival/dispatch inhibiting-signal receiver in the mobile communications system as one example of this invention.

[Description of Notations]

- 10 ... Mobile station
- 11 ... Base station
- 12 ... Base station
- 13 ... Base station
- 14 ... Control center
- 15 ... Service area of the base station 11
- 16 ... Service area of the base station 12
- 17 ... Service area of the base station 13
- 18 ... Connecting line of the base station 11 and a control center
- 19 ... Connecting line of the base station 12 and a control center
- 20 ... Connecting line of the base station 13 and a control center
- 21 ... Public line
- 22 ... Arrival/dispatch prohibition area
- 23 ... Transmitter
- 101, 301 ... Antenna system
- 102, 302 ... Receiving set
- 103, 303 ... Sending set
- 104, 304, 404 ... Central arithmetic unit
- 105 ... Positioning device
- 106 ... Call notice prohibition function part
- 108 ... Arrival/dispatch inhibiting-signal receiving set
- 111 ... Speech processing unit
- 112 ... Microphone
- 113 ... Loudspeaker
- 115 ... User interface device
- 116 ... Message record and playback equipment
- 121, 321, 421 ... Mail arrival keepout area database device
- 122 ... Call notification device
- 131, 331, 431 ... Dispatch keepout area database device
- 132 ... Notification device in a dispatch keepout area
- 305 ... Electric wave time-of-concentration measuring device from a mobile station
- 310 ... Communication apparatus with a control center
- 405 ... Mobile station positioning device
- 411 ... Communication apparatus with a base station group
- 412 ... Communication apparatus with a public line

[Translation done.]

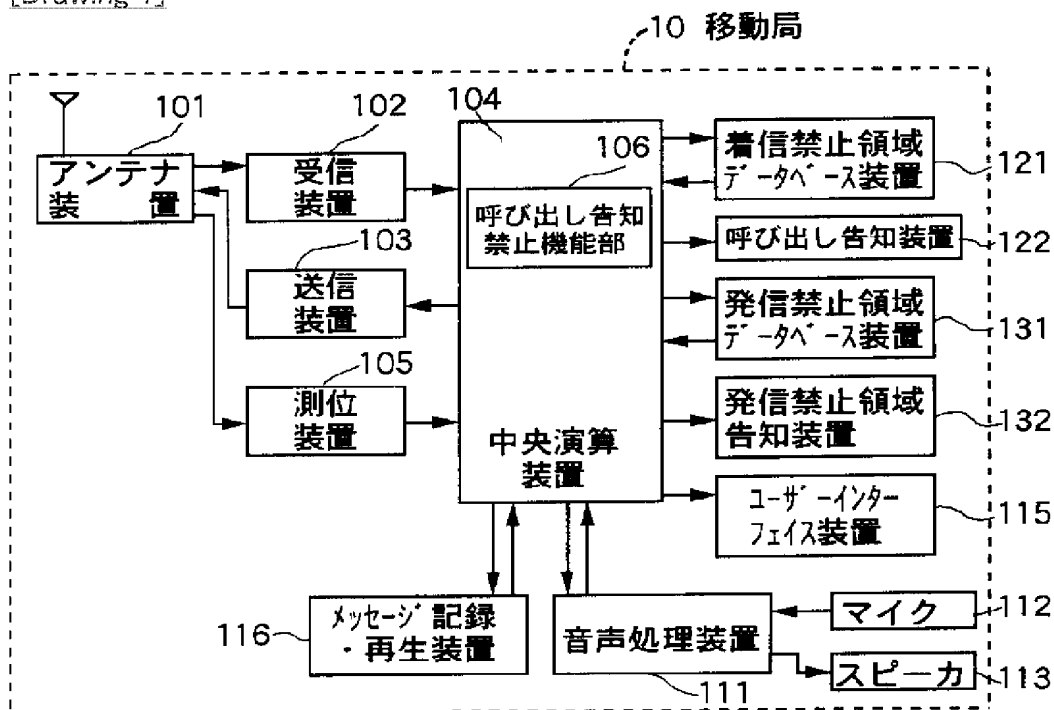
* NOTICES *

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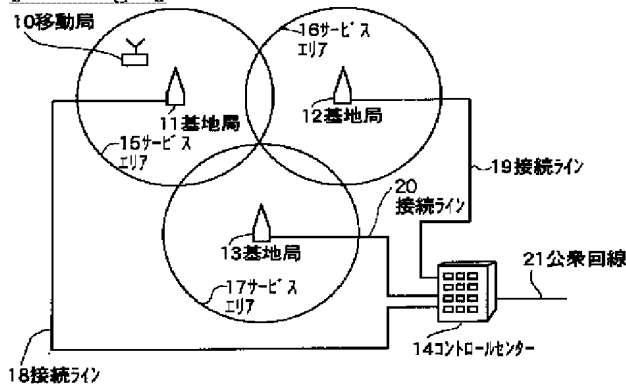
- 1.This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.*** shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

DRAWINGS

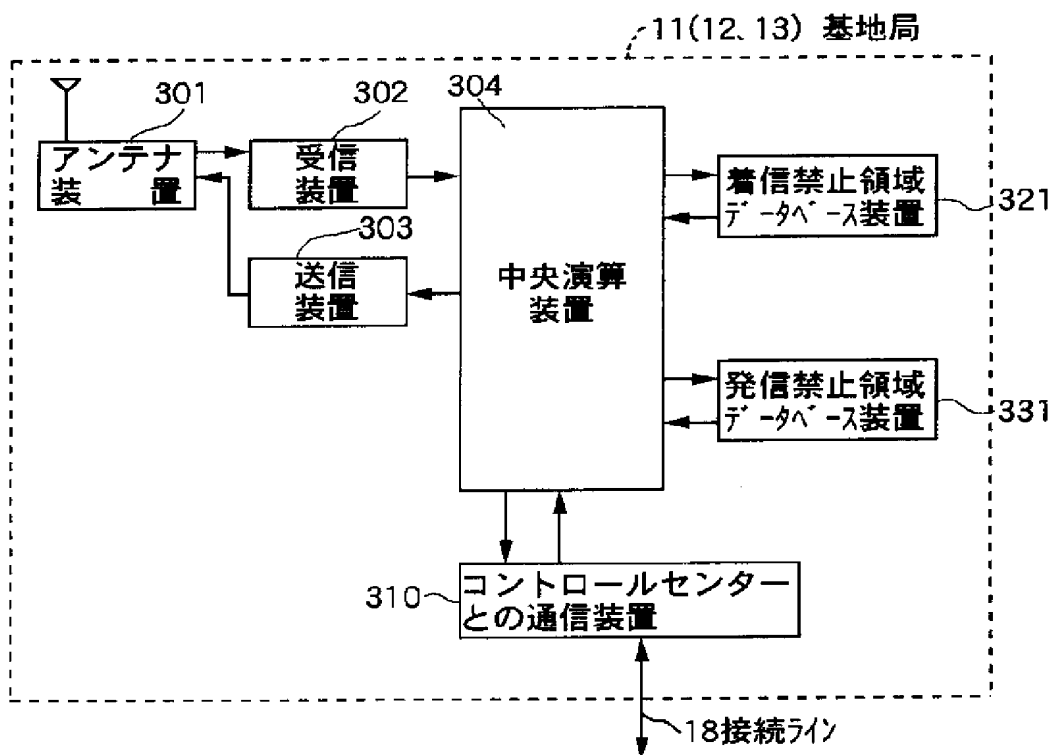
[Drawing 1]



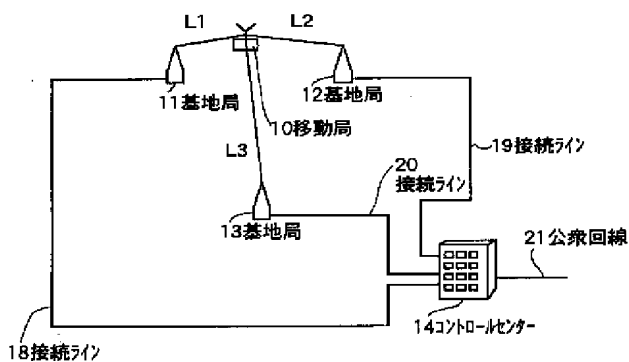
[Drawing 2]



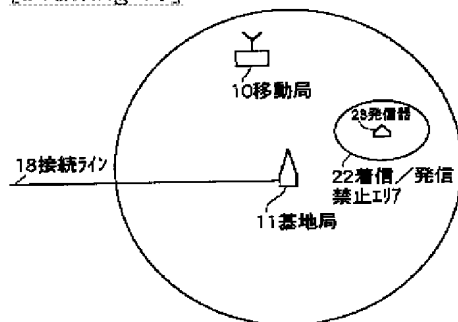
[Drawing 3]



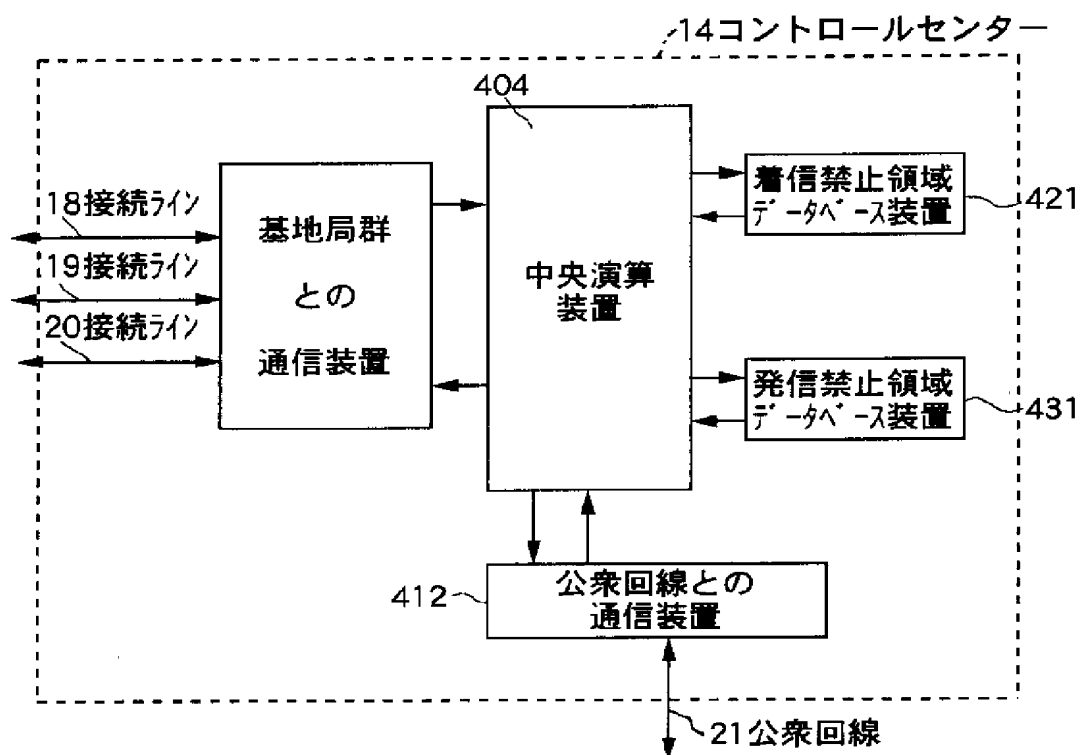
[Drawing 18]



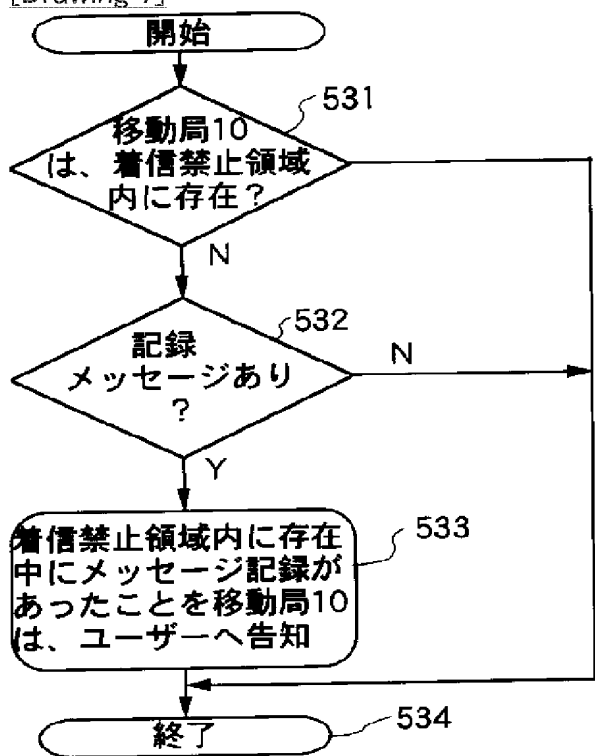
[Drawing 19]



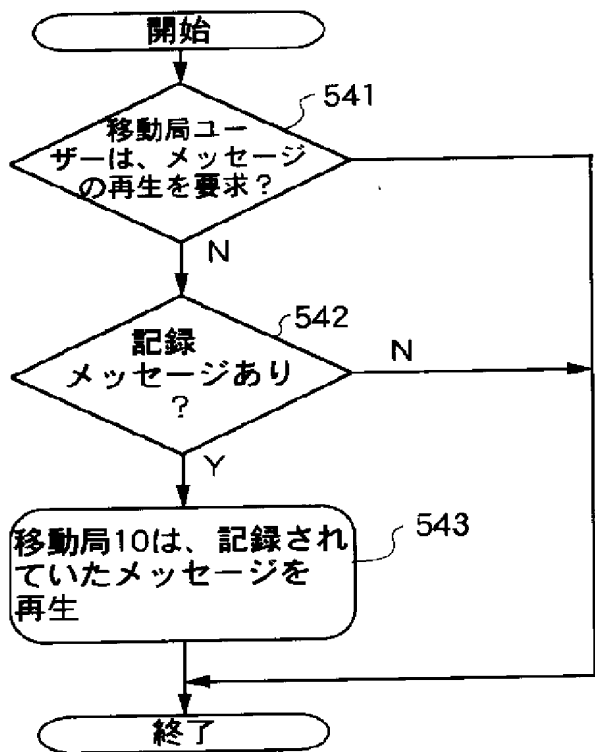
[Drawing 4]



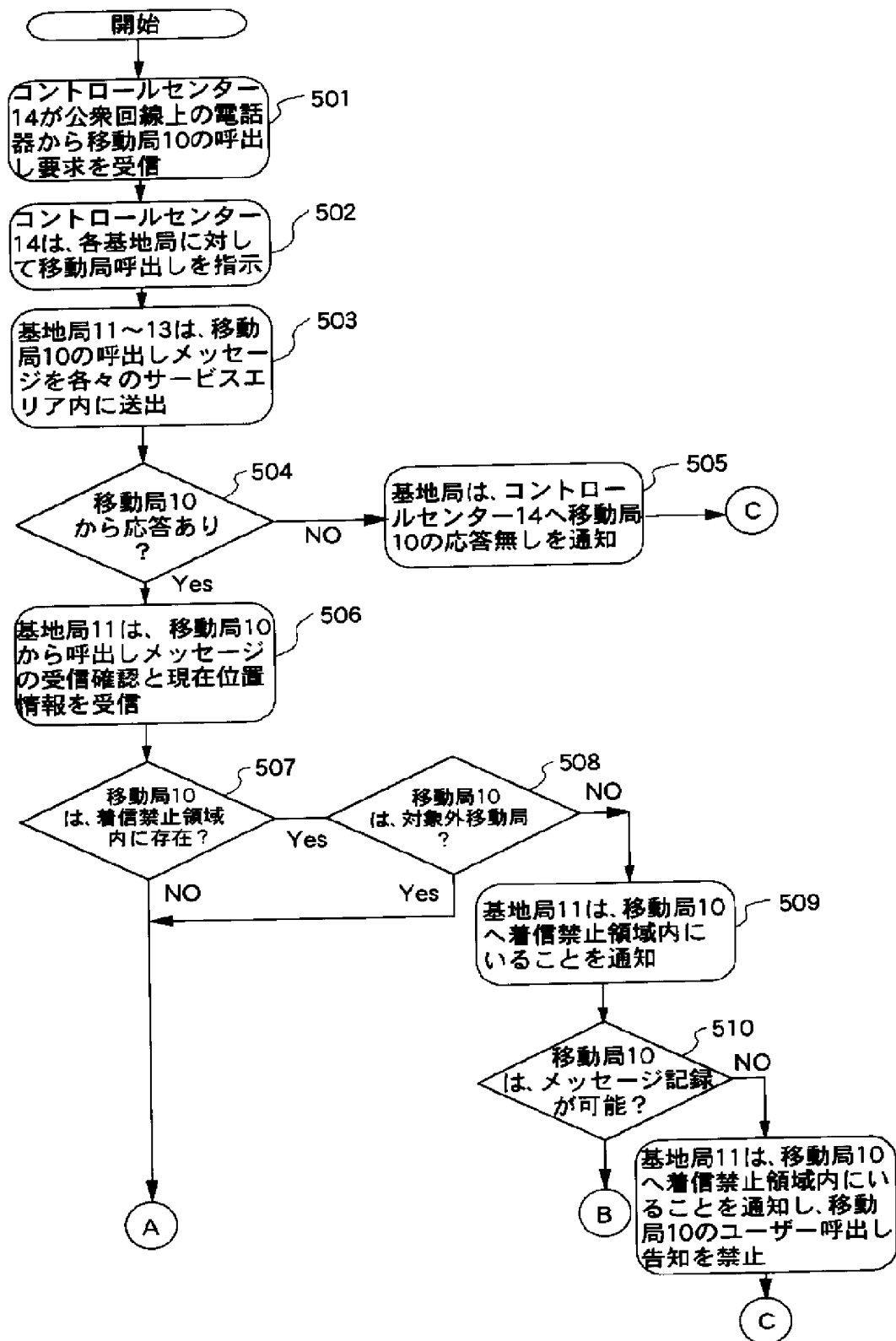
[Drawing 7]



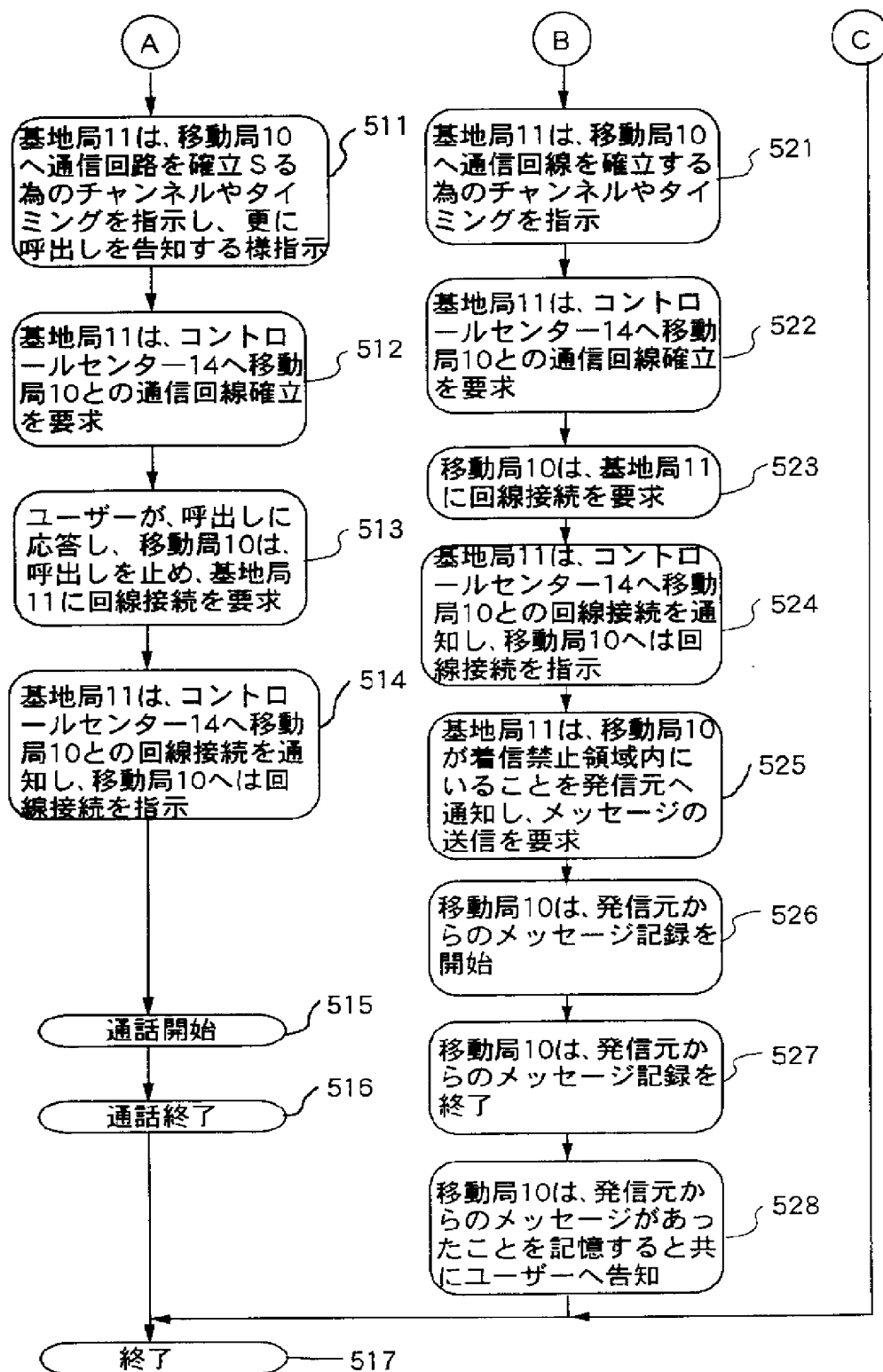
[Drawing 8]



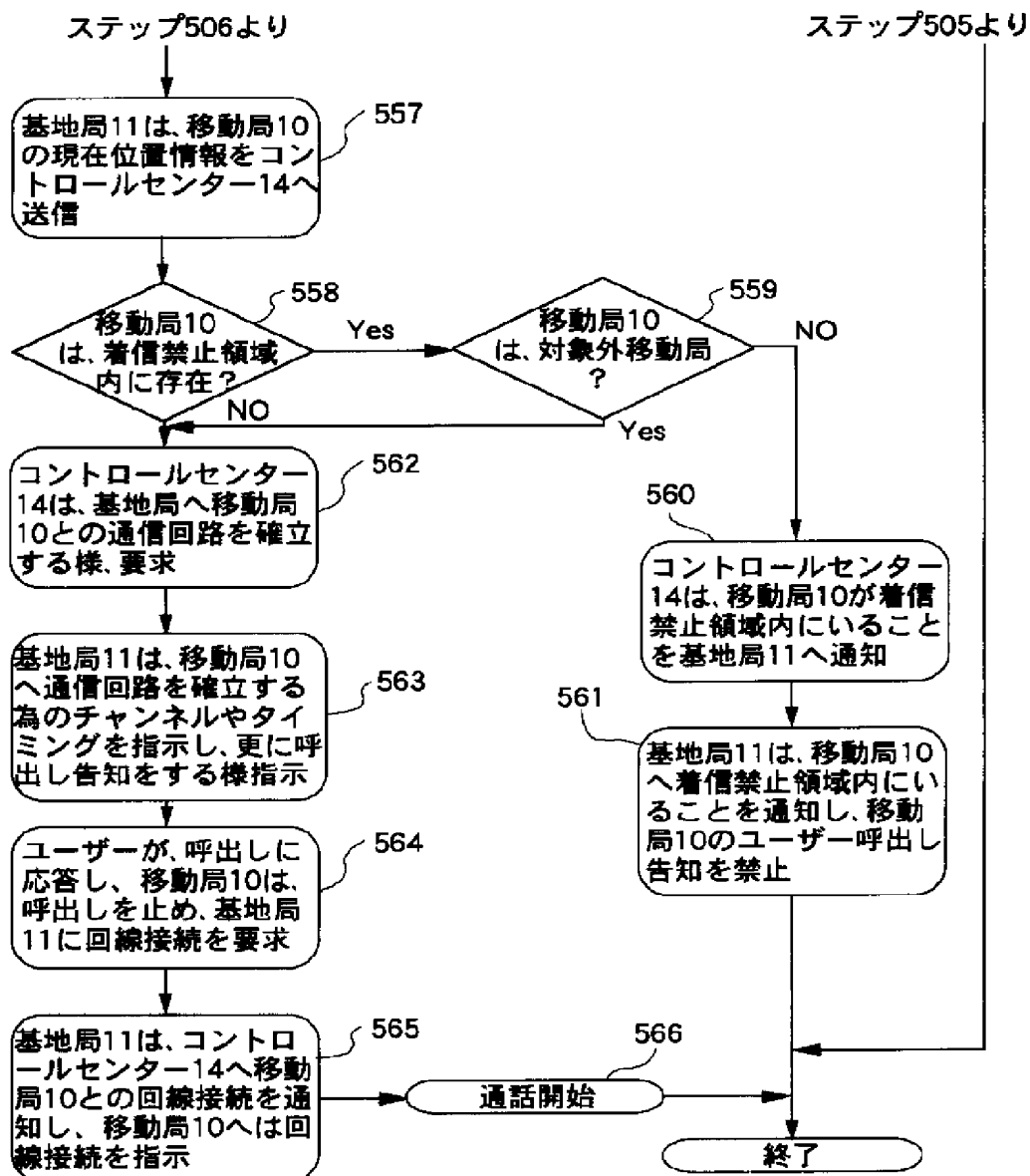
[Drawing 5]



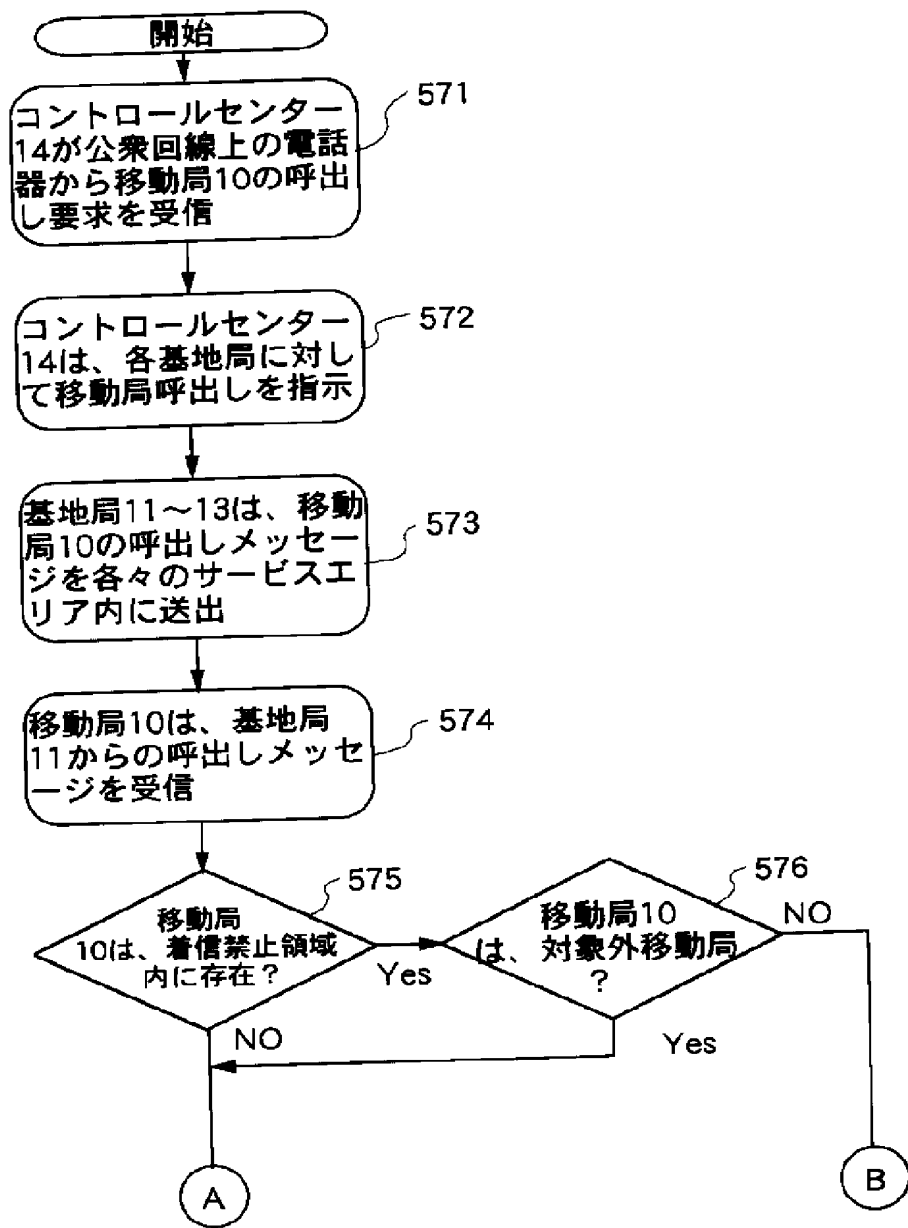
[Drawing 6]



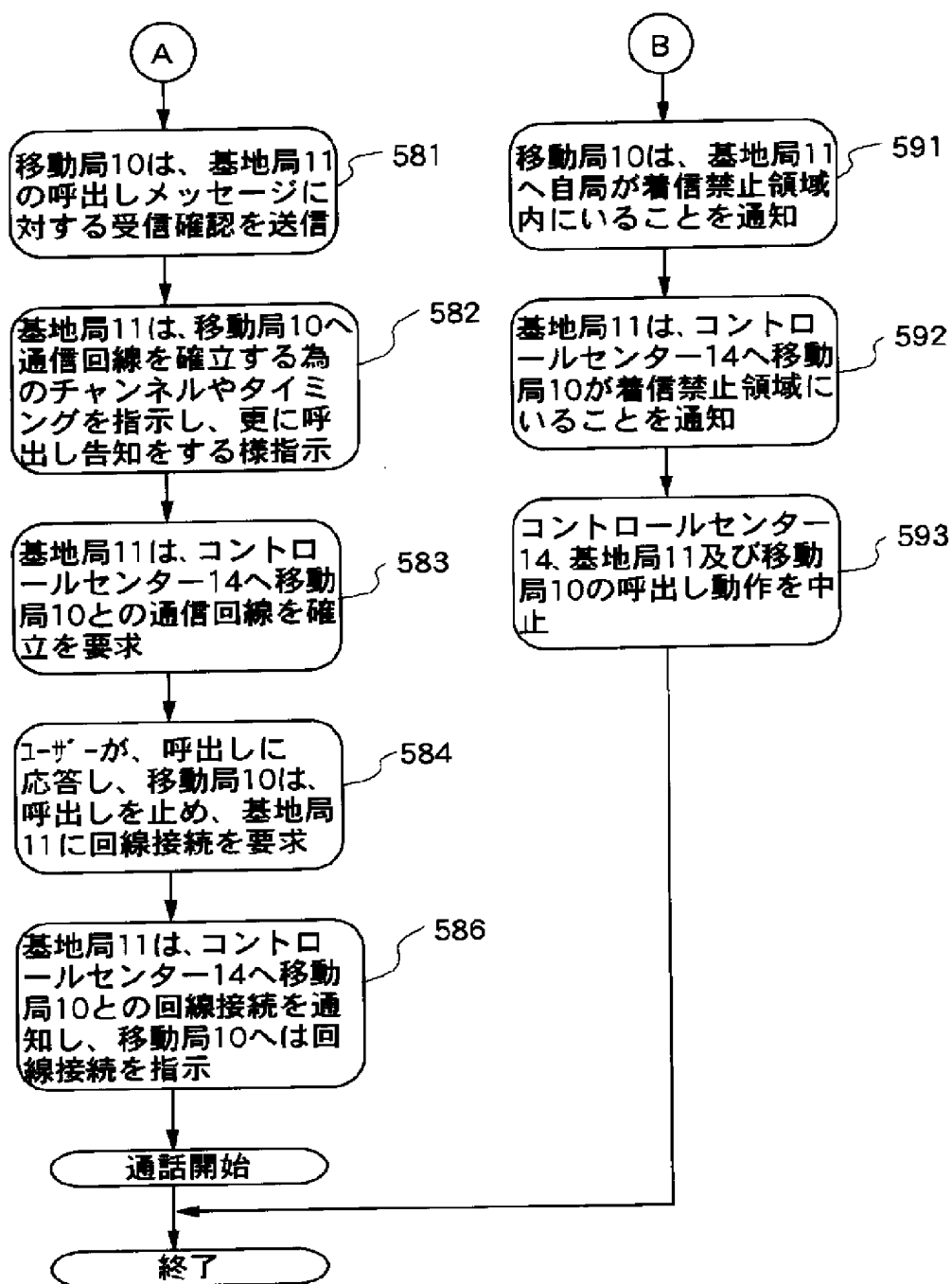
[Drawing 9]



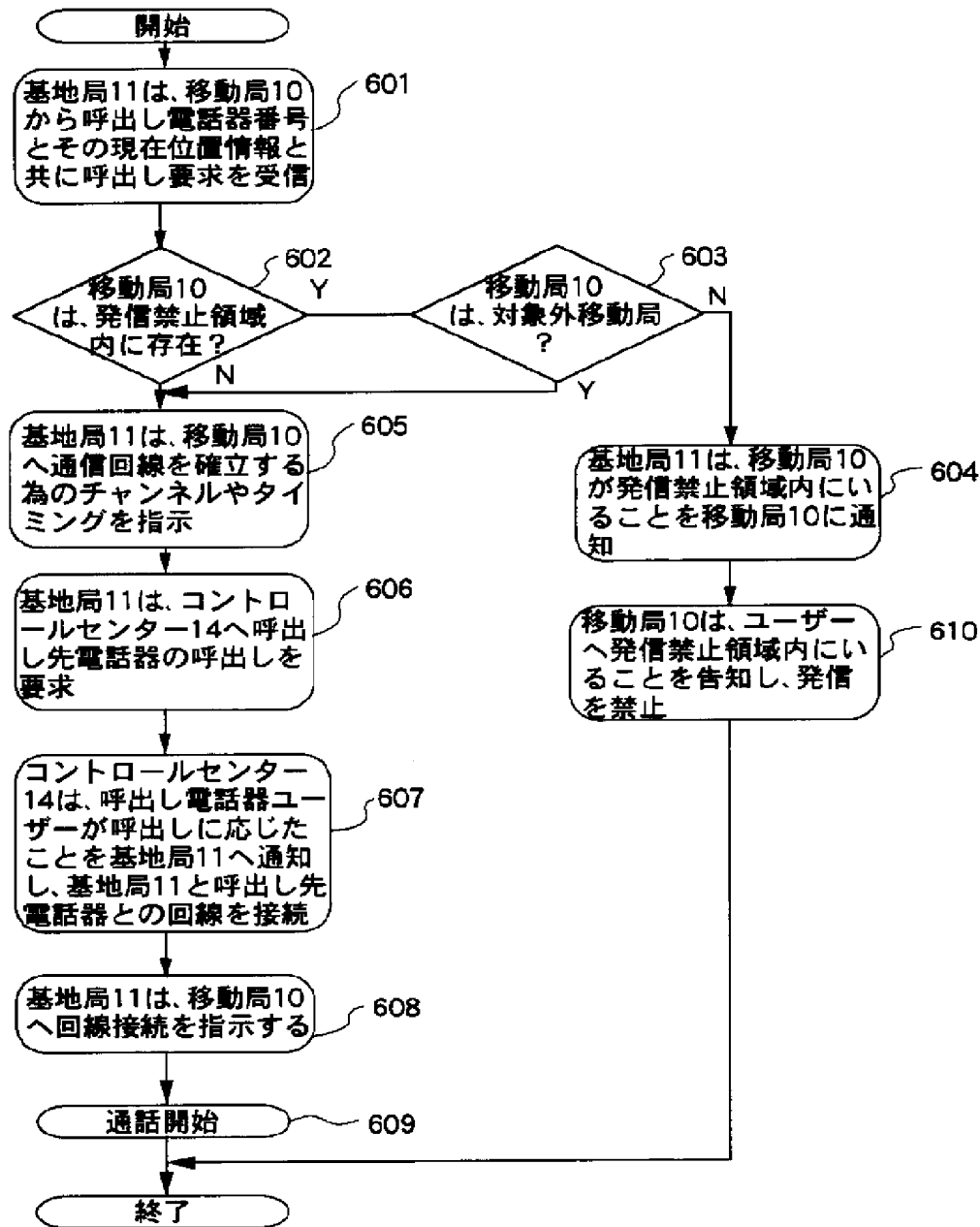
[Drawing 10]



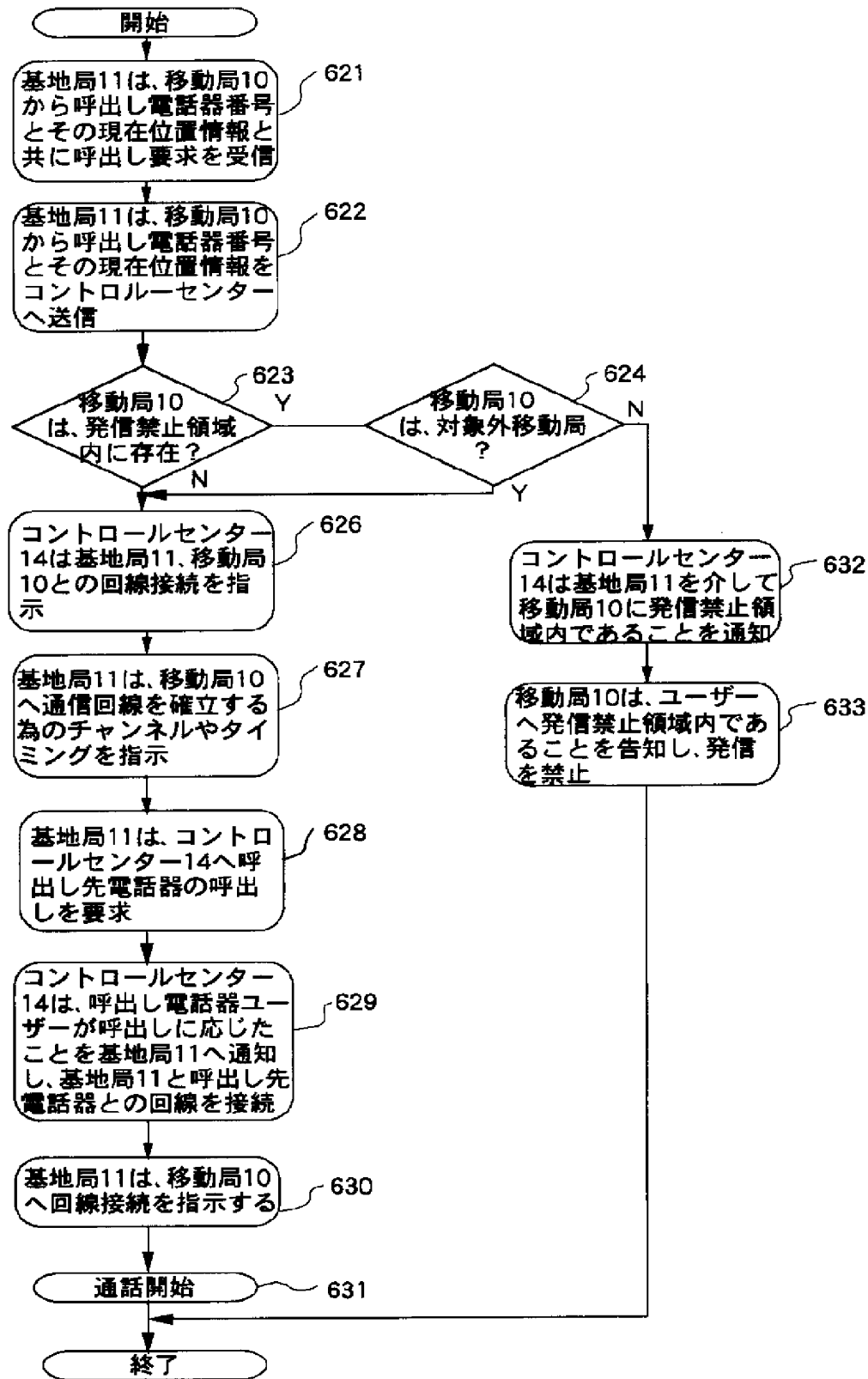
[Drawing 11]



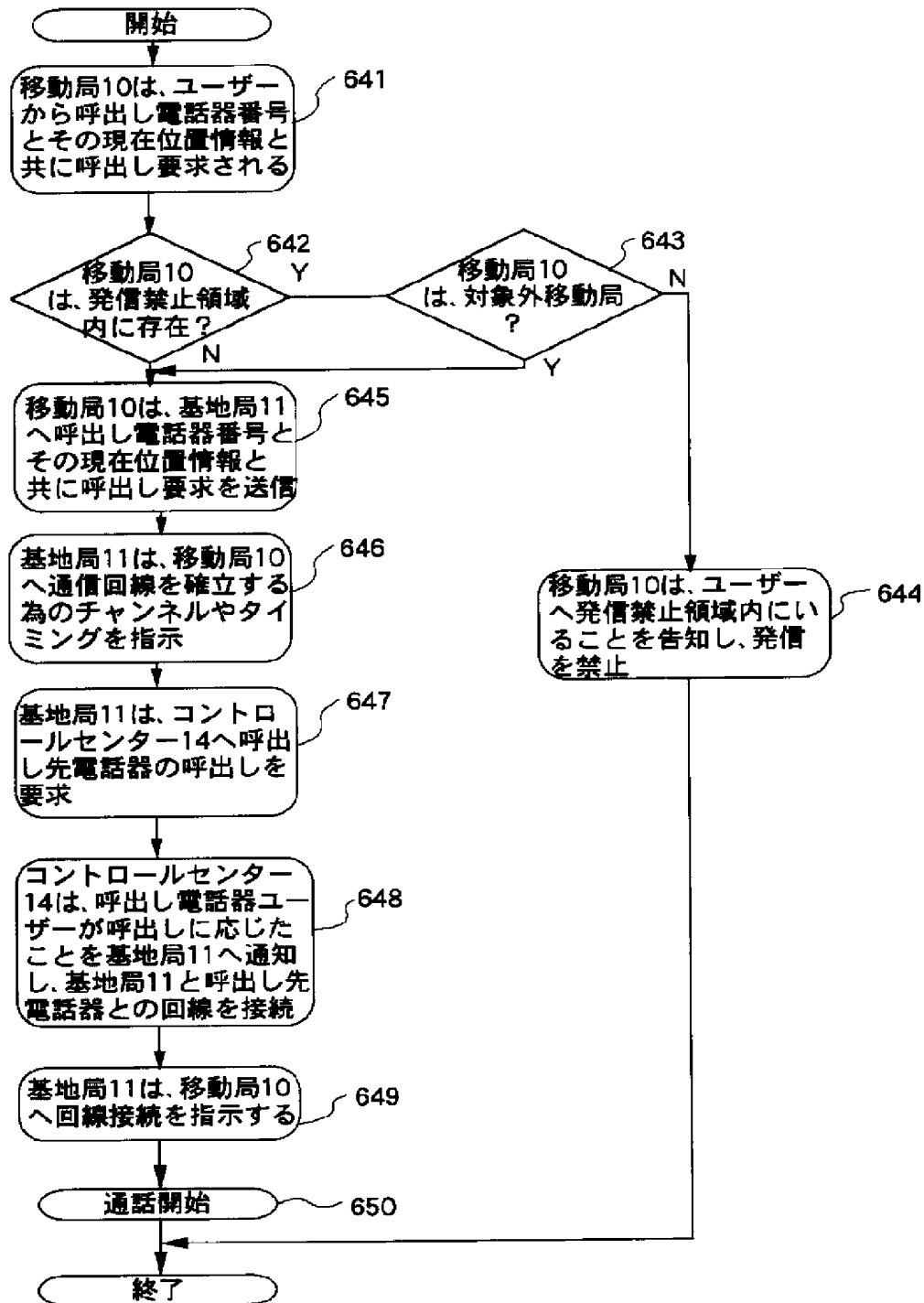
[Drawing 12]



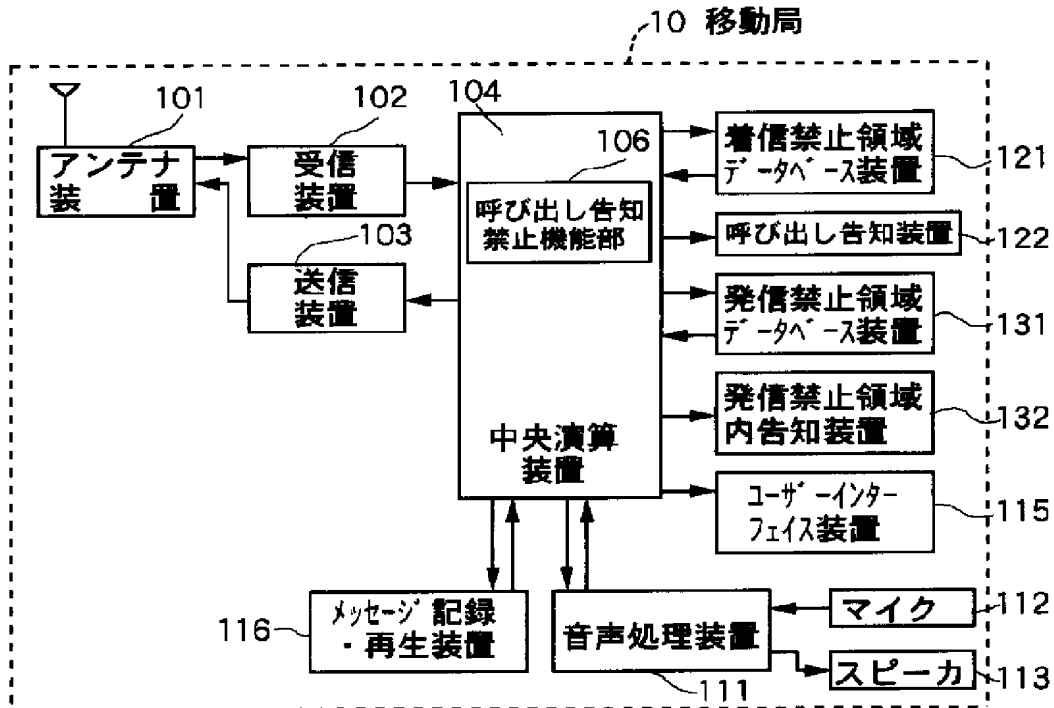
[Drawing 13]



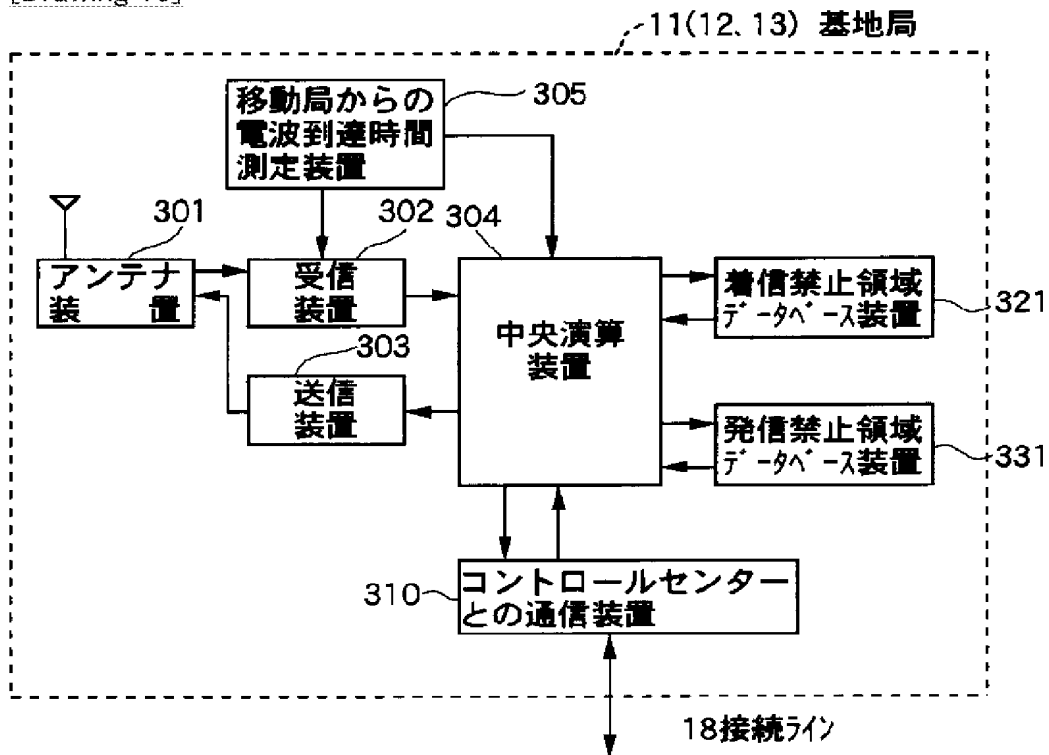
[Drawing 14]



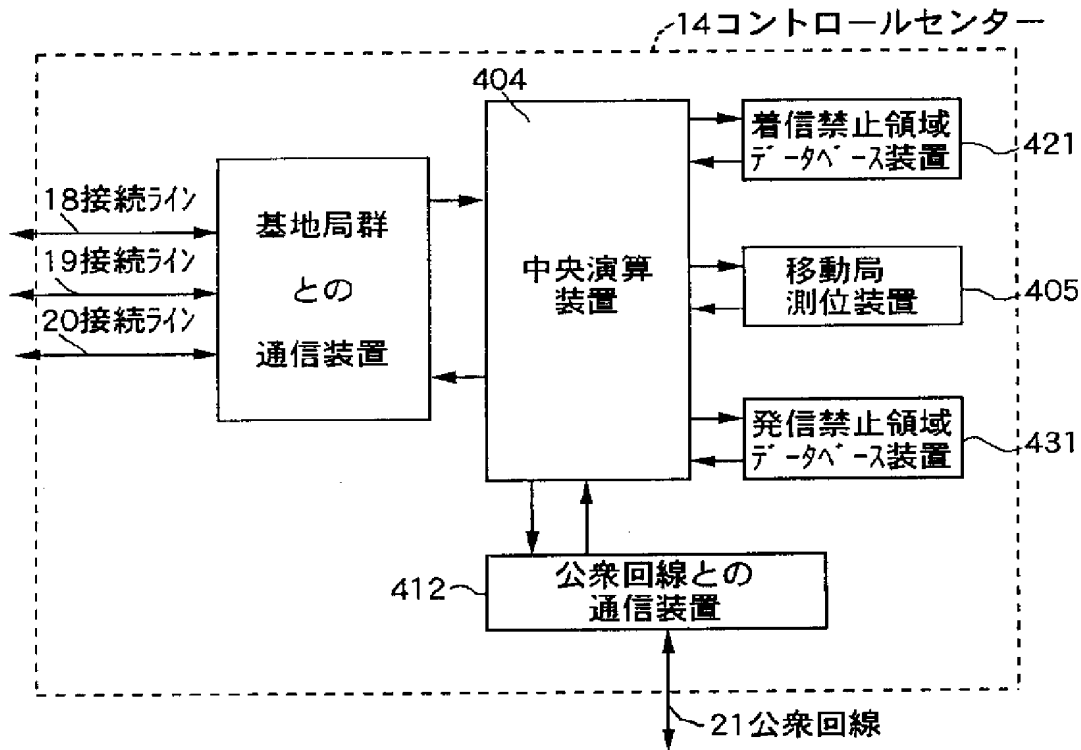
[Drawing 15]



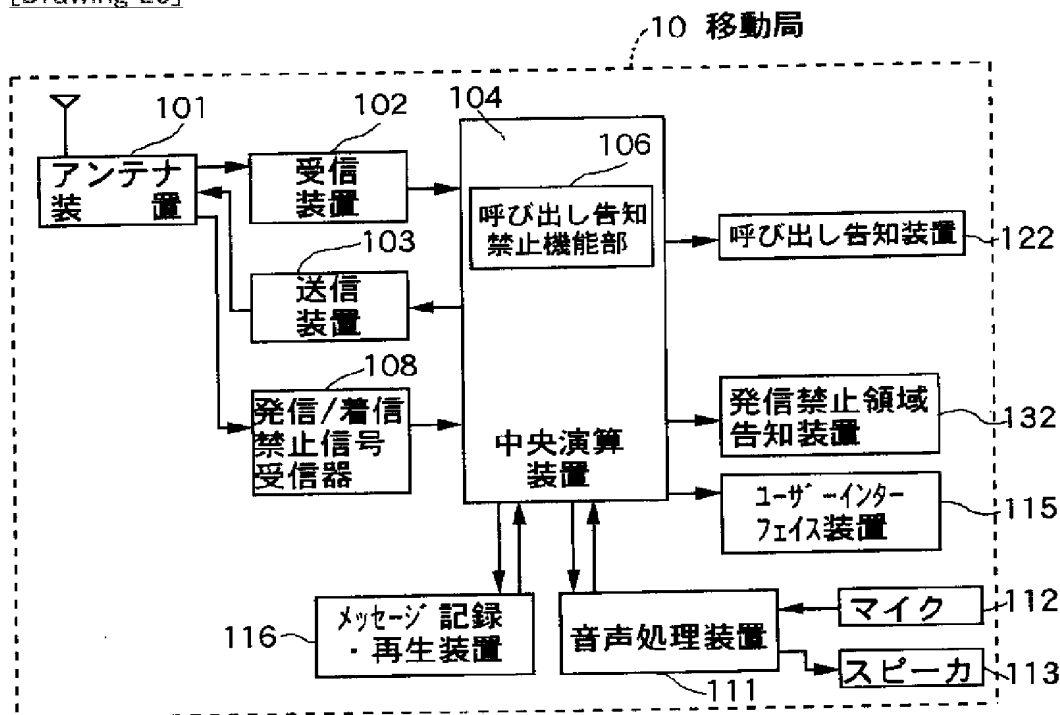
[Drawing 16]



[Drawing 17]



[Drawing 20]



[Translation done.]

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CORRECTION OR AMENDMENT

[Kind of official gazette]Printing of amendment by the regulation of 2 of Article 17 of Patent Law
 [Section classification] The 3rd classification of the part VII gate
 [Publication date]August 3, Heisei 13 (2001.8.3)

[Publication No.]JP,7-87568,A
 [Date of Publication]March 31, Heisei 7 (1995.3.31)
 [Annual volume number] Publication of patent applications 7-876
 [Application number]Japanese Patent Application No. 5-249801
 [The 7th edition of International Patent Classification]

H04Q 7/38
 [FI]

H04Q 7/04 D

H04B 7/26 109 L
 [Written amendment]
 [Filing date]September 7, Heisei 12 (2000.9.7)
 [Amendment 1]
 [Document to be Amended]Specification
 [Item(s) to be Amended]Claim
 [Method of Amendment]Change
 [Proposed Amendment]
 [Claim(s)]

[Claim 1]In a mobile communications system which has a control center which manages a mobile station, a base station, and two or more base stations,

A detection means to detect whether said mobile station is in a mail arrival prohibited position,

A mobile communications system having a notice inhibiting means which forbids a notice of a mobile station arrival call when it is in said mail arrival prohibited position by a detection result in said detection means.

[Claim 2]The mobile communications system according to claim 1 characterized by forbidding establishment of a communication line between said mobile station and said base station when it is in said mail arrival prohibited position by said detection result.

[Claim 3]The mobile communications system according to claim 1 having message record and the reproduction means which records a message from a sending agency when it is in said mail arrival prohibited position by said detection result, and reproduces a message from said dispatch origin according to a demand from a mobile station user.

[Claim 4]A mobile communications system given in any 1 paragraph of claims 1 thru/or 3 characterized by comprising the following.

A positioning device for said detection means to measure a position of this mobile station that a mobile station has.

A data base device which specifies a mail arrival keepout area which a mobile station, a base station, or a control center has.

[Claim 5]A mobile communications system given in any 1 paragraph of claims 1 thru/or 3 characterized by comprising the following.

A positioning device for said detection means to measure a position of a mobile station which a base station and a control center have.

A data base device which specifies a mail arrival keepout area which a mobile station, a base station, or a control center has.

[Claim 6]A mobile communications system given in any 1 paragraph of claims 1 thru/or 3 characterized by comprising the following.

A signal generation device with which said detection means covers applicable area established in each mail arrival prohibition area.

An applicable inhibiting-signal receiving set which a mobile station has.

[Claim 7]A mobile communications system given in any 1 paragraph of claims 1 thru/or 3, wherein said detection means is managed by time information.

[Claim 8]A mobile communications system given in any 1 paragraph of claims 1 thru/or 3, wherein said detection means is managed by priority information for every mobile station.

[Claim 9]The mobile communications system according to claim 3, wherein any one of a mobile station, a base station, and control centers has said message record and reproduction means.

[Claim 10]When two which contains a mobile station at least among a mobile station, a base station, and a control center have said message record and reproduction means and it becomes impossible to record on message record and a reproduction means by the side of a mobile station, The mobile communications system according to claim 3 characterized by what is recorded on message record and a reproduction means by the side of a base station or a control center.

[Claim 11]In a mobile communications system which has a control center which manages a mobile station, a base station, and two or more base stations,

A detection means to detect whether said mobile station is in a dispatch prohibited position,

When it is in said dispatch prohibited position by a detection result in said detection means, it has a means to notify a mobile station user of mobile station dispatch being prohibition,

A mobile communications system forbidding establishment of a communication line between said mobile station and said base station when it is in said dispatch prohibited position by said detection result.

[Claim 12]The mobile communications system comprising according to claim 11:

A positioning device for said detection means to measure a position of this mobile station that a mobile station has.

A data base device which specifies a dispatch keepout area which a mobile station, a base station, or a control center has.

[Claim 13]The mobile communications system comprising according to claim 11:

A positioning device for said detection means to measure a position of a mobile station which a base station and a control center have.

A data base device which specifies a dispatch keepout area which a mobile station, a base station, or a control center has.

[Claim 14]The mobile communications system comprising according to claim 11:

A signal generation device with which said detection means covers applicable area established in each dispatch prohibition area.

An applicable inhibiting-signal receiving set which a mobile station has.

[Claim 15]The mobile communications system according to claim 11, wherein said detection means is managed by time information.

[Claim 16]The mobile communications system according to claim 11, wherein said detection means is managed by priority information for every mobile station.

[The amendment 2]

[Document to be Amended]Specification

[Item(s) to be Amended]0013

[Method of Amendment]Change

[Proposed Amendment]

[0013]

[Function]The mail arrival act in the place which makes others trouble is controllable by forbidding a mobile station from sounding a mail arrival calling sound with the current position of a mobile station, or forbidding communication line establishment by the above-mentioned composition. By or the thing record the message from a sending agency within the mail arrival keepout area of a mobile station, without notifying a mobile station user of mail arrival, and it enables it to reproduce later. The access-to-information opportunity loss of the mobile station user in the field is avoidable, filling the demand of not making you trouble on the outskirts within a mail arrival keepout area.

[Amendment 3]

[Document to be Amended]Specification

[Item(s) to be Amended]0035

[Method of Amendment]Change

[Proposed Amendment]

[0035]

[Table 2]

No.	発信元電話番号	発信者名	記録開始時間
1	03-xxxx-△△△△	□□○○	93年5月5日12:00

[Amendment 4]

[Document to be Amended]Specification

[Item(s) to be Amended]0046

[Method of Amendment]Change

[Proposed Amendment]

[0046]

[Table 3]

No.	サービスイリア	中心地点（緯度、経度）	半径	時刻指定
1	1 5	北緯35度00分00秒， 東経140度00分00秒	100m	92年12月30日12:00 ～ 93年9月1日24:00

[Amendment 5]

[Document to be Amended]Specification

[Item(s) to be Amended]0064

[Method of Amendment]Change

[Proposed Amendment]

[0064]This invention is not limited only to this example, and it may be made for a base station or a control center to, have the message record and playback equipment described here for example, instead of a mobile station. In this case, I hear that a base station or a control center will manage the difference from the example

described above, and it has a message from a sending agency. Although a line connection for a mobile station to record the message from a sending agency is unnecessary, when a mobile station user wants to reproduce the message from a sending agency, it will be necessary to establish a circuit with a control center via a base station or a base station, and to newly acquire data.

[Amendment 6]

[Document to be Amended] Specification

[Item(s) to be Amended] 0068

[Method of Amendment] Change

[Proposed Amendment]

[0068] According to this invention, the message record and the reproduction means which records and reproduces the message from a sending agency are established, Since the message from a sending agency is recorded and he is trying to reproduce the message from the dispatch origin according to the demand from a mobile station user when it is in said mail arrival prohibited position, within the mail arrival keepout area of a mobile station, The message from a sending agency is recorded without notifying a mobile station user of mail arrival, and the access-to-information opportunity loss of the mobile station user in the field is avoidable, filling the demand of not making you trouble on the outskirts within a mail arrival keepout area with enabling it to reproduce later.

[Amendment 7]

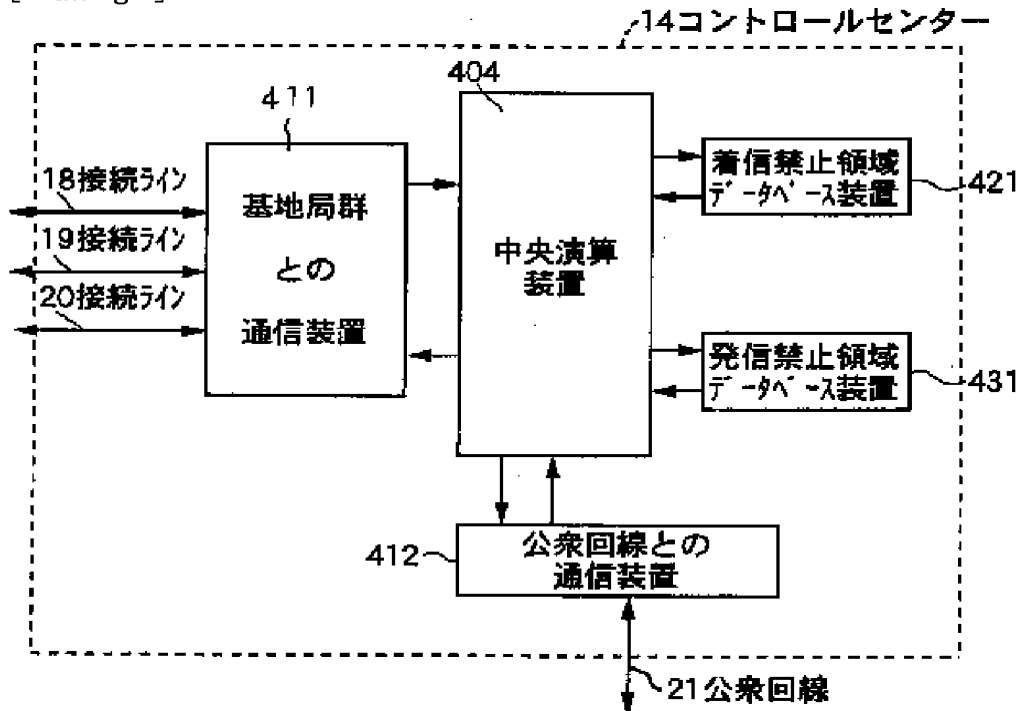
[Document to be Amended] DRAWINGS

[Item(s) to be Amended] Drawing 4

[Method of Amendment] Change

[Proposed Amendment]

[Drawing 4]



[Amendment 8]

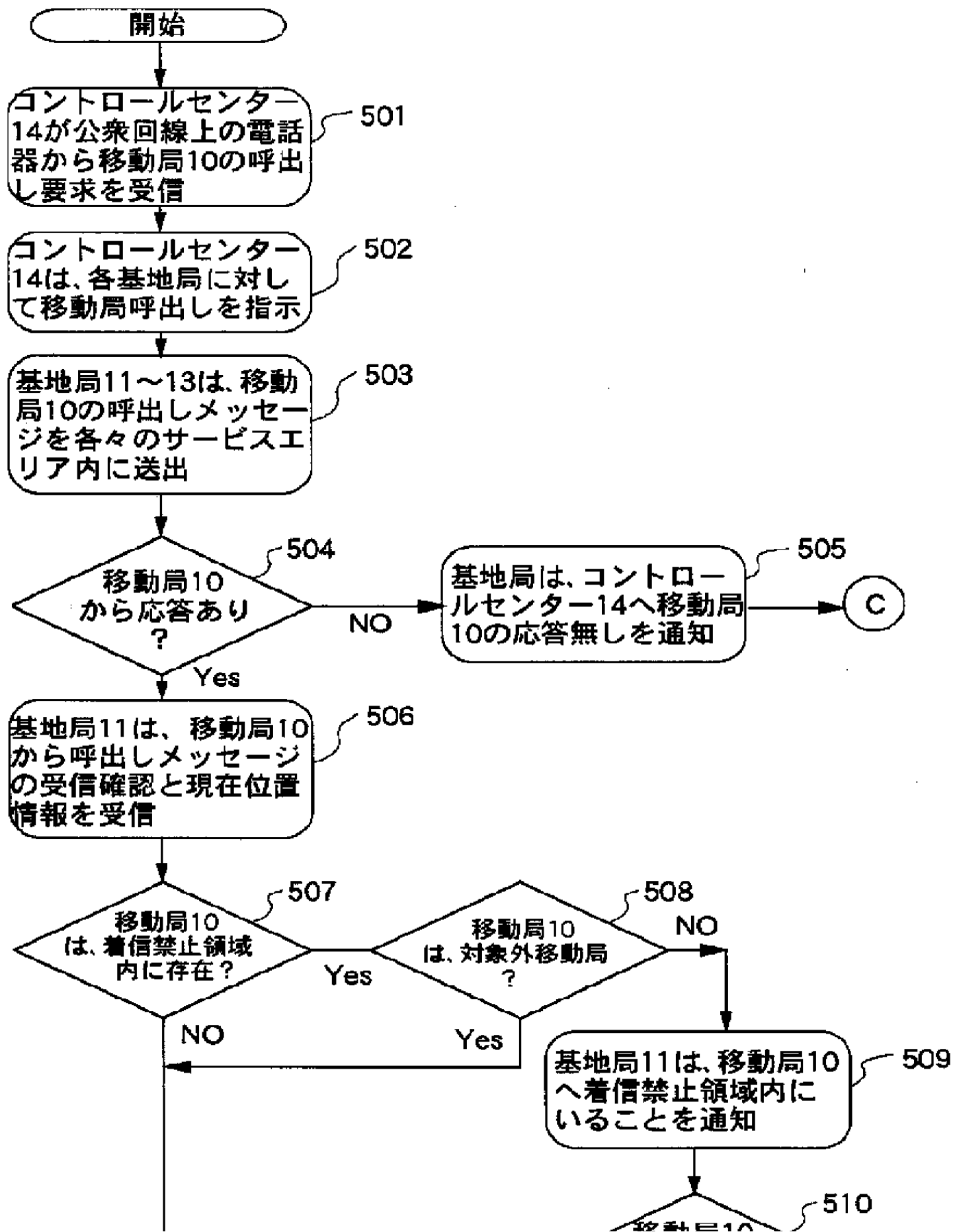
[Document to be Amended] DRAWINGS

[Item(s) to be Amended] Drawing 5

[Method of Amendment] Change

[Proposed Amendment]

[Drawing 5]



[Amendment 9]

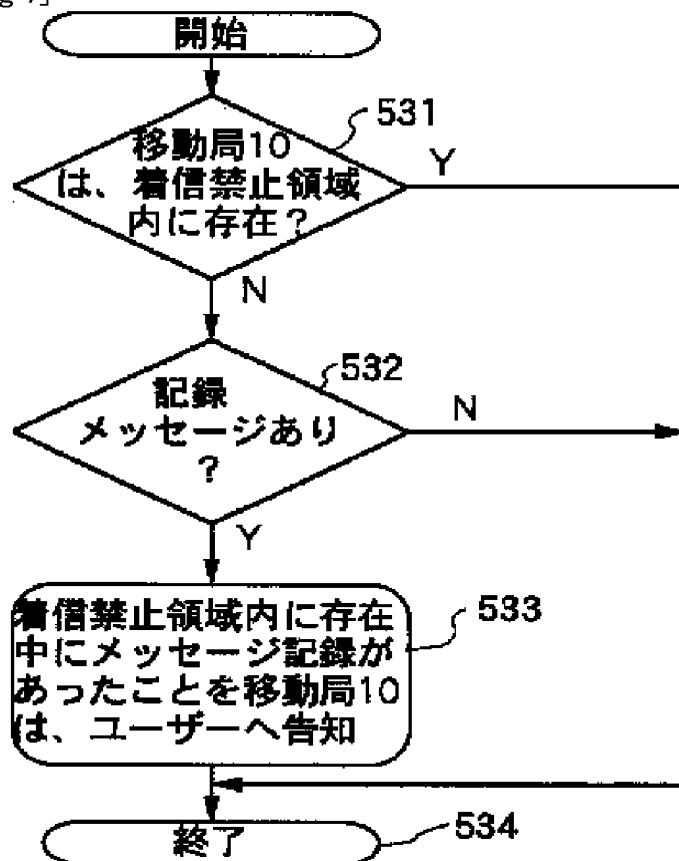
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[Item(s) to be Amended]Drawing 7

[Method of Amendment]Change

[Proposed Amendment]

[Drawing 7]



[Amendment 10]

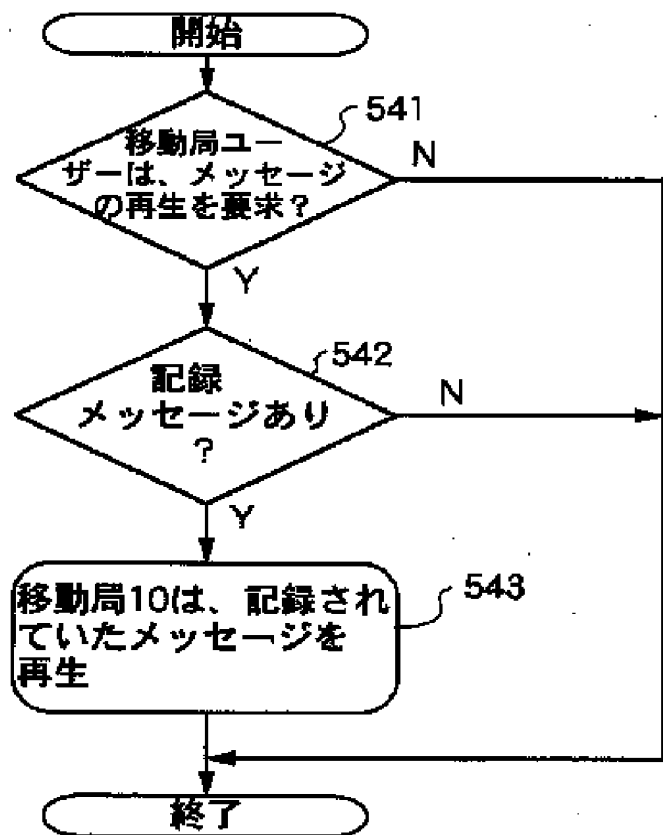
[Document to be Amended]DRAWINGS

[Item(s) to be Amended]Drawing 8

[Method of Amendment]Change

[Proposed Amendment]

[Drawing 8]



[Amendment 11]

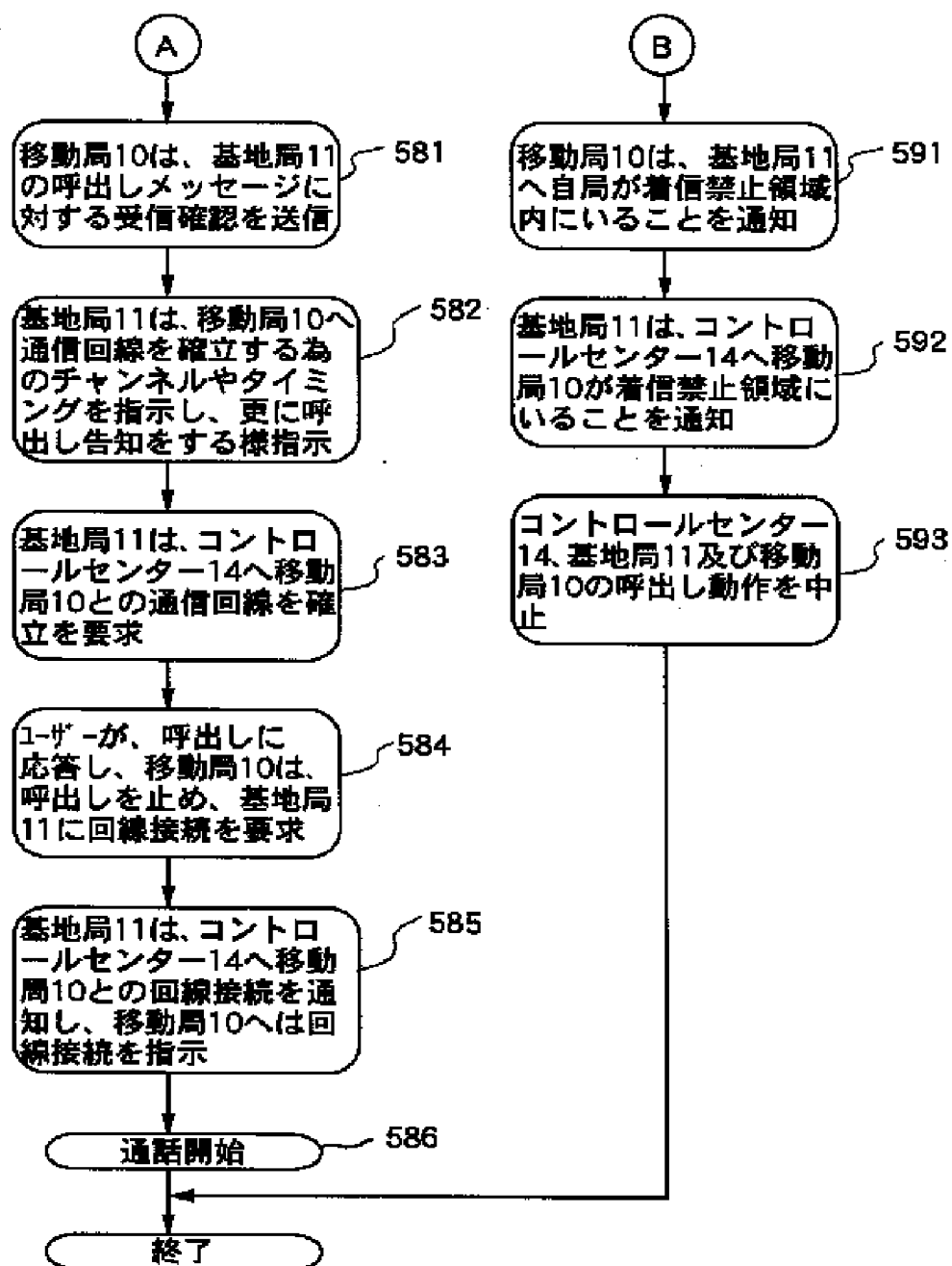
[Document to be Amended]DRAWINGS

[Item(s) to be Amended]Drawing 11

[Method of Amendment]Change

[Proposed Amendment]

[Drawing 11]



[Translation done.]